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BRITISH HOMŒOPATHIC PHARMACOPŒIA.

PUBLISHED UNDER THE DIRECTION OF THE

BRITISH HOMŒOPATHIC SOCIETY.

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THIRD EDITION.

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PREFACE TO THE THIRD EDITION.

THE second edition of the British Homœopathic Pharmacopœia, published in 1876, having been for some considerable time out of print, the British Homœopathic Society resolved on the issue of a new edition, leaving it in the hands of the convener of the Committee who had superintended the bringing out of the last edition to ask such help as he might find he wanted in the preparation of this new edition, from members of the Society, or from others who were interested in the work, so that all needful changes and additions might be made with as little delay as possible.

Mr. Wyborn (of the firm of E. Gould & Son), who had given most valuable help in the preparation of the second edition, again kindly undertook to place his services at the disposal of the Society; and to him they are indebted for the careful calculations and experiments that were needed to make the work as perfect as it is hoped it will be found to be. Without this practical aid it would have been impossible either to finish the work so soon or make it so complete.

To Dr. Richard Hughes and Dr. Burnett, who have given much valuable help, as also to other friends who have assisted by their advice or otherwise, the Society desire to return their grateful thanks.

The objects sought to be attained by Dr. Madden in the preparation of the first edition have been kept in view. Many new articles have been added, and existing ones enlarged, and it is hoped enriched; much has been rewritten, while in some cases obsolete articles have been expunged.

The advances made in Chemistry and Botany within the last few years have called for some changes and additions. Those relating to chemistry have been made on the authority of Miller's *Elements of Chemistry, Inorganic, sixth edition,* by Groves, and *Organic, fifth edition,* by Armstrong and Groves; also Fownes' *Manual of Chemistry, twelfth edition,* by Watts; while in the classification of plants, the system adopted in Bentley's *Manual of Botany, fourth edition,* has been selected.

In matters of Pharmacy reference has occasionally been made to Squire's *Companion to the British Pharmacopœia,* and to Attfield's *Chemistry.*

Tables of *weights* and *measures* adopted, and sections on the preparations employed in testing have been given in extenso in the first part of the work.

Although in previous editions *decimal* proportions have been directed to be used in the preparation of mother tinctures and the attenuation of soluble drugs, it was nevertheless found that some inconsistency existed with regard to these. For example, the proportions of 1 avoirdupois ounce in 10 fluid ounces; 1 grain in 10 minims; 1 grain in 10 grain measures; and 1 grain in 10 grains were severally used. These have now been reduced uniformly to 1 *grain in* 10 *minims,* and the necessary revisions of the tables following the tincture processes have been made.

Experiments have been made in order to ascertain with accuracy the strength of the saturated solutions of Phosphorus and Sulphur, the former both in alcohol and ether, and the latter in alcohol, and the results will be found in the articles under these heads. The valuable remarks of Mr. Thompson, of the firm of Thompson and Capper, of Liverpool (to whom our thanks are due), on the solubility of Phosphorus, have not been overlooked.

With a view to enable the pharmacist to identify and test the purity of each medicine, many new characters and tests have been added, but only such as are, to a great extent at least, distinctive and necessary; while those of a less important nature, which can be ascertained from any work on Chemistry, have been avoided, thus giving prominence to all which are essential.

In the case of most chemical substances in which some traces of impurities necessarily exist, the source of the substance used in the provings and the particular mode of preparation have been indicated, so as to ensure the absence of unusual impurities. And in cases where commercial drugs have been used, the source and process of preparation followed at the date of their introduction have, where possible, been recorded.

The nomenclature adopted throughout the present edition is that of the old German pharmacopœias which is used in the homœopathic literature of most countries.

For, and in the name of, the British Homœopathic Society,

WILLIAM V. DRURY, M.D.,
President of the Society,
and Convener of the Pharmacopœia Committee.

Great Ormond Street,
London, 1882.

PREFACE TO THE FIRST EDITION.

In issuing a new Pharmacopœia the British Homœopathic Society have endeavoured to supply a want which has long been felt in consequence of the number of new remedies that have been proved within the last twenty years.

In 1834, Dr. Quin, the President of this Society, edited the *Pharmacopœia Homœopathica,* in Latin, in the preface to which the following authorities are referred to: viz., Hahnemann's *Reine Arzneimittellehre* and *Chronische Krankheiten,* published at various times between 1811 and 1839; Stapf's *Archiv für Homœopathische Heilkunst;* Hartlaub and Trinks' *Annalen der Homœopathischen Klinik;* and the *Homœopathisches Dispensatorium für Aerzte und Apotheker* published by Caspari in 1825, of which Hartmann published a Latin edition in 1827, a German ditto in 1829, and a fourth, entitled *Homœopathische Pharmacopöe für Aerzte und Apotheker* in 1832; Belluomini's translation of Caspari's work into Italian in

1829, and La Rajah's *Elimenti di Farmacopea Omiopatica, estratti dalla Materia Medica di Hahnemann*, published in the same year at Naples. Since Dr. Quin's Latin edition of the Pharmacopœia the following works have chiefly regulated the operations of homœopathic chemists—viz., Jahr's *Pharmacopœia and Posology*, which appeared in Germany, and was translated into English by Kitchen and published in Philadelphia in 1842; Buchner's Pharmacopœia, to which Jahr refers; Gruner's *Homöopathische Pharmacopöe*, compiled and published in 1845; Dr. G. Schmid's work on Pharmacy and Posology, which appeared in 1846; an English *Homœopathic Pharmacopœia and Posology*, "compiled from the works of Buchner, Gruner, and Jahr, with original contributions by Chas. J. Hempel, M.D.," by Messrs. Leath and Ross in 1850; Buchner's second and enlarged edition of his *Homöopathische Arznei-Bereitungslehre*, in 1852; and an "authorized English edition" of Carl Ernst Gruner's *Homœopathic Pharmacopœia*, published in Leipsic, London, and New York, in 1855; since which no work has appeared that has become a standard among the homœopathic chemists.

In collecting the materials for the following work, the Committee appointed by the British Homœopathic Society, at their annual meeting in June, 1867, set before themselves the following objects:—

1. The identification of all the substances used as homœopathic medicines, concerning which any doubt existed.

2. The revision of the various pharmaceutical processes.

3. The supplying of good practical tests, whereby the identity and the purity of each medicine could be ascertained.

In carrying these various objects into effect they have made use of all the sources of information within their reach, and as regards not a few of them they have instituted direct experiments.

In identifying the plants used as medicines various methods have been followed. For example, in those instances where the medicine is officinal in the "BRITISH PHARMACOPŒIA OF 1867" (*published under the direction of the General Council of Medical Education and Registration of the United Kingdom, pursuant to the Medical Act*, 1858), the Committee have accepted the conclusions arrived at by the compilers of that work, knowing that every endeavour has been made by them to render their work perfect. As regards substances peculiar to Homœopathy, they have been guided by such information as could be obtained from the existing works on Homœopathic Pharmacy, and from botanical works, as well as from notices in the periodical literature of our school. It has often happened that botanical authority has decided on the identity of two or more plants known under different names, and in these cases the source of the officinal preparation has been decided upon other grounds. For example, *Pulsatilla nigricans, Pulsatilla Nuttalliana,* and *Anemone pratensis,* appear to be three forms of one and the same plant, of which the first is common in Germany, the second in America, and the third in England.

Again, as regards *Bryonia alba* and *Bryonia dioica*, since it is known that for twenty-five years many English homœopaths have used chiefly the *B. dioica* (at any rate, all who have employed low attenuations), and found it answer to the medical characters given to the *B. alba*, it has been thought expedient to record *both as officinal.* It is strongly recommended, however, that in every instance where it is possible the exact variety (in fact, best of all, *the identical preparation*) used in the provings should be employed for making the higher attenuations. This suggestion is made because it is quite possible that the same natural causes which have modified the physical characters of the plant, and produced the variety, may have equally modified its pathogenetic effects, at least as regards its most refined symptoms.

In revising the pharmaceutical processes the Committee have been greatly assisted by some of the leading homœopathic chemists, who have undertaken numerous experiments on their behalf.

In supplying tests for identifying, and ascertaining the purity of, various substances, the Committee have largely availed themselves of the BRITISH PHARMACOPŒIA OF 1867. It seemed to be a work of supererogation to go over again the ground which had already been worked so well, and at so much cost of time and labour.

Many of the chemical substances used in Homœopathy are employed also by the old school, and since the majority of these are best prepared on a large scale, it has been recommended that they should be obtained from the manufacturing chemists, while, at the same time, it is urged that in every instance their purity shall be determined by direct experiment before any of them are used for making our preparations.

Throughout this work the *weights* and *measures* are those that have been adopted by the BRITISH PHARMACOPŒIA, and the system of *volumetric analysis*, which is often referred to, is that for which full details are published at the close of the same work, pages 392—400.*

The object of this work is to instruct homœopathic chemists in all the processes peculiar to Homœopathic Pharmacy, but no attempt is made to teach them the entire art of pharmacy. No one should pretend to make homœopathic medicines who is not thoroughly versed in the art of pharmacy, and has not had large practical experience in the selecting of drugs, and in making all the ordinary preparations employed by chemists.

Again, no attempt has been made to teach *Botany* and *Natural History*; it has been deemed sufficient, in reference to each article belonging to the *vegetable* and *animal* kingdoms, to give the name, the natural order, and then the description of the exact species in sufficient detail for its identification; consequently a good practical knowledge of botany and natural history is essential.

Since there are various systems of classification in use, it is necessary to mention that all vegetable substances are referred to the *Natural Orders* adopted by *Dr. J. H. Balfour, Professor of Botany in the Edinburgh University*, and described by him in his "*Outlines.*" The animal substances have been referred to the classes and orders as given in the "*Compendium of Generic Distinctions,*" published in *The Illustrated Natural History,* by *Rev. G. Wood,* and which he states to be that used by Owen, Gray, &c.

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* These have been inserted in the present edition.

Finally, no attempt has been made to teach *Chemistry*, it being taken for granted that all who call themselves homœopathic chemists already possess a good practical knowledge of that science. For the purpose of avoiding confusion, the old and best-known names have been retained in the case of all chemical compounds, but, in addition, the *present name* of each, and its notation according to the new system, has been given on the authority of *Miller's Elements of Chemistry, fourth edition.* It has been urged that the names used by Hahnemann should be laid aside, and others adopted in accordance with the designations common in this country. The denomination of all compounds, however, is at present undergoing such repeated changes that no alteration made could be final, and hence the compromise has been adopted of retaining the old and referring to the present name in each case.

With these prefatory remarks, the *British Homœopathic Society* commend their new Pharmacopœia, in the sincere hope that by its universal adoption the difficulties arising from vague and varying preparations may be overcome.

For, and in the name of, the British Homœopathic Society,

FREDERIC F. QUIN, M.D.,
President of the Society.

HENRY R. MADDEN, M.D.,
Convener of the Pharmacopœia Committee.

London, 1870.

INTRODUCTION.

In addition to a good practical knowledge of botany, natural history, chemistry, and pharmacy, the homœopathic chemist must bring to his work thorough honesty of purpose and painstaking accuracy of detail. Without these, he can never succeed in preparing the medicines in a manner to satisfy the homœopathic practitioner, but with these qualifications he will find in the following pages all that he requires.

It is a fundamental rule in homœopathic practice to employ no medicine which has not been first *proved,* by ascertaining its effects when given to healthy persons. This is a necessity of the law of *similars,* which requires that all diseases shall be treated by medicines that have been shown to be capable of producing on the healthy body symptoms in all essentials similar to those present in the sick person.

In all Hahnemann's researches, as well as in the provings which have been subsequently made, simple substances only, with very few exceptions, have been used; it follows, therefore, that homœopathic pharmacy employs few compounds.

Hahnemann's experiments having shown that many insoluble and inert substances become active medicinal agents after they are reduced to an impalpable powder and diffused equally through a large quantity of some non-medicinal substance, a class of preparations, unrecognized in ordinary pharmacy, has been introduced under the name of *triturations*.* It is not the object of this work to discuss any theoretical questions, and hence no opinion will be expressed on the much-disputed point of *dynamization*, or the development of power by means of rubbing or succussion. It is essential, however, to refer to the facts of the case, which may be briefly stated as above, and it is important to notice both the results of the process of trituration—viz., the reducing of the material to an extremely fine powder, and also the separation of these very fine particles from one another by a careful admixture with some inert substances. Mere grinding, so as to secure the utmost attainable reduction of size of the particles on the one hand, or the most careful mixture of the substances with some inert material, so as to isolate each particle, on the other, will not serve our purpose. In all Hahnemann's experiments both these conditions were secured, and consequently in repeating his experiments both must engage our attention.

The medicinal efficacy of these triturations led the way to the use of very much diluted tinctures, and was followed in course of time by the systematic dilution of all medicines according to a fixed scale. These diluted preparations have been called indiscriminately *Dilutions*, *Attenuations*, and *Potencies*, but since the latter term involves a theory it will not be employed in the following pages. *Attenuation*, being on the whole the preferable name, will be invariably used to denote every preparation which contains less of the crude material than the strongest officinal preparation.

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* A formula for a decimal trituration of Elaterium with Sugar of Milk has been recently added to the British Pharmacopœia

BRITISH
HOMŒOPATHIC PHARMACOPŒIA.

PART I.

GENERAL RULES.

There are three forms of preparation recognized in homœopathic pharmacy:—

1. *Solution* in water, in alcohol, or in mixtures of these liquids, or very rarely in ether, glycerine or syrup.
2. *Trituration* with sugar of milk.
3. *Liquid attenuations.*

These constitute all the preparations recognized by homœopathists, with the exception of pilules and globules, which, however, are merely *dispensing forms* of the liquid attenuations.

It will be necessary to preface the descriptions of these operations by an account of the menstrua employed in carrying them out.

WATER. H_2O.

Nothing but the purest *distilled water* must ever be used in the preparation of any of the medicines. The ordinary distilled water sold by wholesale druggists is quite inadmissible, from the fact of its being frequently distilled in stills that are used for distilling aromatic waters, and hence it cannot be sufficiently pure for our purpose.

All the water used by homœopathic chemists for the purpose of attenuations, or for reducing the strength of rectified spirit, must be distilled in a well made tin-lined copper still with worm and all connections of pure tin. The apparatus should never be much more than half filled with water, and the distillation should be carried on at a gentle heat, so as to guard against any of the water boiling over. Whatever quantity is distilled, the first 20th part should be rejected, and only 16 parts should be carried over. For example, in distilling 10 pints, the first 10 fluid ounces would be thrown away, and the next 8 pints would be preserved, after which the process would be stopped. Amber glass bottles have been found most suitable for preserving it.

Tests.—It possesses neither colour, taste, nor smell. Evaporated in a clean glass capsule, it leaves no visible residue. It is not affected by Sulphuretted Hydrogen, Oxalate of Ammonia, Nitrate of Silver, Chloride of Barium, or Solution of Lime.

ALCOHOL. C_2H_6O.

This is the most important of all the menstrua employed by the homœopathic chemist, and too great care cannot be exercised to insure its purity. It should be purchased in the form of *Rectified Spirit of first quality*, 60° *O.P.*, from a respectable distiller, and that used for making the attenuations should then be slowly re-distilled either in glass apparatus, or in a similar still to that recommended for water, furnished with a water jacket,* with all the precautions mentioned under "Water." A tubulated or stoppered glass retort, with a long beak, placed in a capacious sand bath heated by gas and attached to a long necked receiver, answers well for this purpose.

No alcohol which has not undergone this fresh distillation should be employed in making any attenuations intended to be carried beyond 3^x.

Characters and Tests.—Colourless, transparent, very mobile and inflammable, of a peculiar pleasant odour, and a strong spirituous burning taste. Burns with a blue flame, without smoke. Specific gravity 0·8298. Remains clear when diluted with distilled water. Odour and taste purely alcoholic. 4 fluid ounces with 30 grain measures of the volumetric solution of Nitrate of Silver exposed for twenty-four hours to bright light, and then decanted from the black powder which has formed, undergo no further change when again exposed to light with more of the test.

The following strengths should always be kept on hand, and should be made by the chemist himself, using distilled water for the dilution, prepared as already described.

1. *Dilute Alcohol.*—This is made by mixing equal measures of rectified spirit and distilled water. The mixture should have a density of 0·940, and contains about 40 per cent. by weight of absolute alcohol.

2. *Proof Spirit.*—This is made by mixing 5 measures of rectified spirit with 3·2 measures of distilled water. The mixture should then be agitated and allowed to cool to 60° F., and a sufficient quantity of distilled water added to increase the bulk to 8 measures. It should have a

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* In distilling alcohol great care should be taken to prevent explosion. The stopper of the receiver must be kept loose, in order that it may act as a safety valve.

density of 0·920, and contains about 49 per cent. by weight of absolute alcohol.

3. *Spirit of* 20° *O.P.* (over proof).—This is made by mixing 6 measures of rectified spirit with 2 measures of distilled water, the contraction resulting from the mixture of the two liquids being made good in the manner directed under "Proof Spirit." It should have a density of 0·8939, and contains about 61 per cent. by weight of absolute alcohol.

4. *Spirit of* 40° *O.P.* (over proof).—This is made by mixing 7 measures of rectified spirit with 1 measure of distilled water, the contraction being made good as directed under "Proof Spirit." It should have a density of 0·8646, and contains about 73 per cent. by weight of absolute alcohol.

5. *Rectified Spirit* (= 60° over proof) has, as before stated, a density of 0·8298, and contains about 87 per cent. by weight of absolute alcohol.

6. *Absolute Alcohol*, having a density of about 0·795, is required for a few of the preparations, and may be obtained from rectified spirit in the following manner:—

Take of

Rectified Spirit	1 pint.
Carbonate of Potash	1½ ounce.
Slaked Lime	10 ounces.

Put the carbonate of potash and spirit into a stoppered bottle, and allow them to remain in contact for two days, frequently shaking the bottle. Expose the slaked lime to a red heat in a covered crucible for half an hour, then remove it from the fire, and, when it has cooled, immediately put the lime into a flask or retort, and add to it the spirit from which the denser aqueous solution of carbonate of potash, which will have formed a distinct stratum at the bottom of the bottle, has been carefully and completely separated. Attach a condenser to the apparatus, and allow it to remain without any external application of heat for twenty-four hours; then, applying a gentle heat, let the spirit distil until that which has passed over shall measure 1½ fluid ounce; reject this, and continue the distillation into a fresh receiver until nothing more passes at a temperature of 200°.

To obtain greater purity, this may be re-distilled in the manner described on pp. 2 and 3.

Characters and Tests.—Colourless and free from empyreumatic odour. Specific gravity 0·795. It is entirely volatile by heat, is not rendered turbid when mixed with water, and does not cause anhydrous Sulphate of Copper to assume a blue colour when left in contact with it.

It is very necessary to preserve absolute alcohol in well-stoppered and capped ether bottles, since it attracts water from the air as greedily as Sulphuric Acid, and would therefore be rapidly spoilt by exposure.

ETHER. $C_4H_{10}O$.

This is required for very few of our preparations. It may be purchased from the manufacturing chemists, and examined as follows:—

Characters and Tests.—A colourless, very volatile and inflammable liquid, of a well-known and characteristic odour, boiling below 105° Fahr. Specific gravity 0·735. Mixed with an equal volume of water, shaken well, and allowed to stand, nine-tenths will separate and float on the water undissolved. It evaporates without residue.

It should be kept in capped and well-stoppered bottles, in a cool place.

GLYCERINE. $C_3H_8O_3$.

A sweet principle obtained from fats and fixed oils, and containing a small percentage of water.

This is required for preserving some animal poisons. It should bear the following

Characters and Tests.—A clear, colourless fluid, oily to the touch, without odour, of a sweet taste ; freely soluble in water and in alcohol. When decomposed by heat it evolves intensely irritating vapours. Specific gravity 1·25. Diluted with six times its volume of distilled water, it gives no precipitate with Chloride of Barium, Nitrate of Silver, Solution of Lime, or with Sulphuretted Hydrogen when previously acidulated with Hydrochloric Acid.

SYRUP.

A solution of refined sugar, consisting of pure cane sugar obtained from the juice of the stem of Saccharum Officinarum, *Linn.*, known in commerce as the finest loaf sugar. It may be prepared as follows :—

Take of

Refined Sugar - - - -	5 pounds.
Distilled Water - - - -	2 pints.

Dissolve the sugar in the water with the aid of heat; and add, after cooling, as much distilled water as may be necessary to make the weight of the product seven pounds and a half. The specific gravity should be 1·330.

SUGAR OF MILK. $C_{12}H_{24}O_{12}$.

This is a very important substance in homœopathic pharmacy, and great care must be taken to insure its purity. It has been selected for the purposes to which it is applied for two reasons—1st, because it is devoid of all medicinal action; and 2nd, because its crystalline particles are very hard, and hence are of great use in grinding down the particles of drugs submitted to the process of trituration. It is never found pure in commerce, and even that which is professedly prepared for homœopathic use is sometimes adulterated. Starch has been found mixed with it, and this will seriously interfere with its triturating power. The homœopathic chemist should examine every sample when purchased, before attempting to use it for triturations. The powder should answer to the following

Characters and Test.—Scentless, gritty to the touch, faintly sweet. Boiled with water and cooled, it gives no blue colour with an aqueous solution of Iodine.

The ordinary commercial article may be refined for our purpose (1) by solution in distilled water and careful re-crystallization, until it assumes the requisite purity and whiteness; or (2) by precipitation from a filtered aqueous solution by the addition of rectified spirit, washing the crystalline precipitate with distilled water and drying carefully. It is then pulverized as finely as possible in a perfectly clean mortar, and sifted through a fine hair drum-sieve, which must not be used for other purposes.

The sugar should be kept in a dry, cool place, in well-closed glass jars.

Having thus given an account of the menstrua employed in the preparation of homœopathic drugs, it is necessary in the next place to lay down a few general rules for the selection of the remedies themselves.

Homœopathy makes use of all materials which are capable of modifying the health of living creatures, and hence collects its remedies from all the three kingdoms of nature. The following are considered the acknowledged methods of securing the best and most reliable preparations:—

1. As far as possible, collect all vegetable and animal products fresh.

2. Where they are the produce of foreign countries and can be only had as imported, obtain them from trustworthy druggists, but always in the state in which they were imported—never in the form of powder.

(This precaution is necessary, since some druggists never hesitate to use the same mill, without proper cleaning, for grinding different medicines—a laxity which would be unpardonable in a homœopathic chemist.)

3. As regards plants, the time for collecting these must be regulated by the part which is officinal. Vegetable physiology must here be the guide, since it will enable us to predicate the exact time when the part will display most fully its characteristic properties. A few exceptions may exist to the following conclusions, but, as a general rule, it will be found that—

When the *whole plant* is used, it should be gathered when it is partly in flower and partly in seed.

When the *leaves* are used, they should be collected just before or during the early part of the flowering time.

This rule requires modification in the case of biennials, since the leaves which first appear in the spring of the second year are in this case the best, and should be collected as soon as the flowering stem begins to shoot.

When the *flowers* are used, they should be collected partly in bud and partly expanded.

When the *seeds* and *fruits* are the officinal part, they should be collected when fully ripe, unless otherwise ordered.

When the *young shoots* are ordered, they should be collected in spring, when the whole plant is in full vigour.

When the *bark* is employed, it must be collected either in the early spring or the autumn, most frequently at the latter season. The same rule holds good with respect to the *root bark.*

When the *wood* is the officinal part, it should be collected late in the autumn—in fact, after the fall of the leaf, if the tree is deciduous.

When the *root* is the part employed, it may be collected either late in the autumn or early in spring, but never when the aërial parts of the plant are in full activity.

4. After the fresh materials are collected they should be prepared as soon as possible, for the purpose of avoiding all deterioration. If gathered at some distance from home the fresh plants should be packed carefully in tin cases (ordinary botanical boxes) and kept as cool as possible. If, however, there be no opportunity for preparing them for some time after their collection, they must be carefully dried by tying them in loose bundles and hanging them in the shade, protected from rain, &c., and as soon as they are dry they should be carefully packed in hermetically-sealed tin cases.

5. The same rules, as far as they apply, must be followed in the collecting of animal substances.

6. All minerals and chemical compounds must be carefully tested before they are used.

7. From the time that the medicinal substances are obtained until they are converted into the regular pharmaceutical preparations, they should be most carefully preserved from damp and dust, from contact with other medicinal materials, from strong odours of any kind, and

from light. All should be preserved in glass or earthenware jars or bottles, and be well corked or stoppered.

It will now be necessary to give in detail the directions for making the different preparations.

I.—SOLUTIONS.

(A.) Solutions in Distilled Water.

Several saline substances are directed to be dissolved in distilled water. In such cases 10 grains by weight of the salt must be dissolved in a sufficient quantity of the water, and the volume of the solution increased to 100 or 1,000 minims, as the case may be; and no such preparation can be considered satisfactory unless the solution is perfectly free of all sediment, and continues clear and transparent. If, after a time, it deposits any crystals, or if any of the salt effloresces around the neck of the bottle, or if a fibrous-looking sediment (*conferva*) appears in the solution, or if the solution changes colour materially, in each and all these instances the preparation should be rejected and a fresh quantity made. Since many aqueous solutions do not keep for any length of time, it is well to dissolve only a sufficient quantity of the salt at a time to meet the current demand, and to make this first decimal or centesimal attenuation again and again, as required. The salt itself should be obtained in sufficient quantity to last for some time, except in the case of perishable compounds, so as to avoid the necessity for repeated analyses, to insure the purity of the articles.

(B.) Solutions in Alcohol.

Tinctures.

The objects to be attained in these preparations are the following:—

1. A preparation containing all the soluble ingredients of the substance employed.

2. A uniform strength, so that it may be always known exactly how much of the dry crude material is represented in a given measure of the tincture.

3. A fixed alcoholic strength, so that in making dilutions all decomposition may be avoided, by using a spirit of the same alcoholic strength as that existing in the tincture.

These objects may be attained in the following manner:—

1. The complete solution of all soluble matter can be accomplished by varying the alcoholic strength to suit the nature of the ingredients in each plant; using a very dilute spirit where the ingredients are chiefly soluble in water, and a strong spirit where alcohol is the best solvent. Also, by using a sufficient quantity to insure the complete exhaustion of the plant.

2. The uniform strength of tincture is advisable for many reasons, and especially in connection with the making of attenuations. Hitherto the mother tinctures made from fresh plants have varied greatly in strength, not only among themselves, but the tincture of the same plant differed from time to time according to whether the fresh plant chanced to be more or less juicy. In consequence of this, the lower attenuations have varied in strength, since in every instance the same number of drops of mother tincture were added to a given quantity of spirit. To obtain uniformity it is necessary to ascertain the quantity of moisture contained in the fresh plant, and to allow for this in making the tincture.

In every instance the dry crude substance is taken as the starting-point from whence to calculate the strength, and, with very few exceptions, *the mother tinctures con-*

tain all the soluble matter of 1 *grain of the dry plant in* 10 *minims of the tincture.*

3. It will be noticed that a series of tables are given at the close of the Tincture Processes, by means of which the pharmaceutist can calculate the exact quantity and strength of spirit which he has to use in the case of each medicine. The necessity for these tables is owing to the water present in the fresh plant mixing with and diluting the spirit employed in making the tincture, so that the quantity of the spirit used should vary according to the percentage of moisture in the plant. By careful attention to these tables, uniform products may be obtained from all plants, notwithstanding their variableness of moisture; and also by diluting the matrix tinctures with a spirit of the same strength, dilutions may be always made of the same medicinal value.

PREPARATION OF TINCTURES OF VEGETABLE SUBSTANCES.

PROCESS I.—BY PERCOLATION.

This process should be used in all cases of dry plants, roots, seeds, &c., and in the case of such fresh plants, &c., as do not require to be made by the following processes.

Preparing the Percolator.—Take a York Glass Company's percolator (see Fig. 1), tie over the small end a piece of fine, well-washed *book-muslin.* Place upon the muslin a layer of about a quarter of an inch of coarsely-powdered green glass,* then a layer of finely-powdered

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* The green glass should be prepared by pounding in a mortar well-washed and dried common green bottles; the powder should then be washed with distilled water, to get rid of the *impalpable powder*, and, after being well dried, it should be sorted into three sizes of *coarse* and *fine powder*, and *granulated glass*, by passing through sieves of different degrees of fineness.

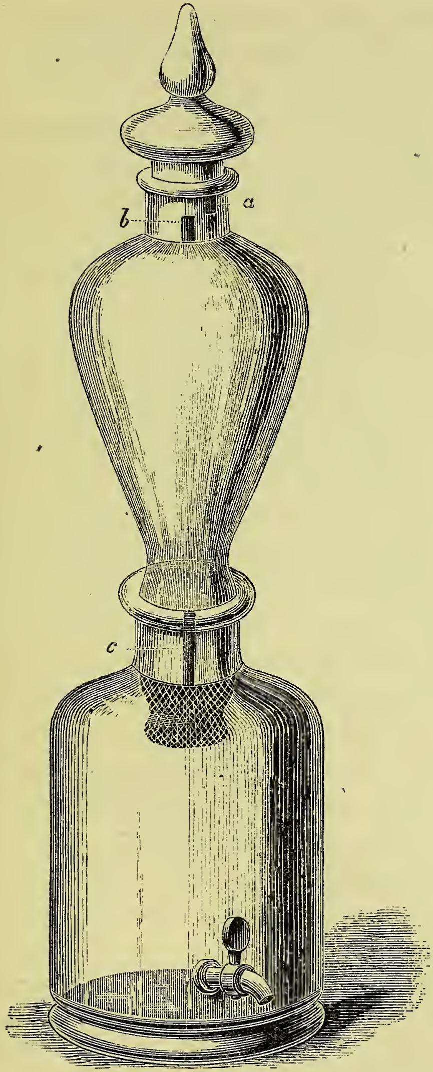

Fig. 1.—York Glass Company's Percolator.*

* This percolator has been decided on because it is one of the best the Committee are acquainted with. It is entirely made of glass, and is readily cleaned. The chief advantage however, consists in its ingenious valves, by which the process of percolation can be stopped at

glass half an inch in depth, and lastly, a thin layer of coarsely-granulated glass. The percolator is now ready for receiving the drug.

Preparing the Drug.—1. *If dry*, reduce any quantity —for example, 4 ounces and 170 grains by weight—to a moderately fine powder, by bruising in a mortar.

2. *If fresh*, cut the plant in pieces, pass it through a tinned-iron mincing machine,* and finally pound it in a Wedgwood mortar so as to reduce it to a fine and uniform pulp. Then weigh 100 grains of the pulp and dry it carefully on a water-bath until it ceases to lose weight; re-weigh it, and ascertain how much it has lost in drying. If the loss does not exceed 70 per cent., proceed with the packing at once, but if it exceeds 70 per cent., put the moist magma into a press and extract as much juice as possible. Pour the juice into the receiver of the percolator, which must be kept in a cool, dark place until the rest of the process is completed. Pass the squeezed magma through the mincing machine a second time, or triturate it lightly in the mortar, in order to separate the particles, and proceed with packing.

Packing the Material.—Insert the powder or the moist magma, as the case may be, little by little, spreading it evenly, and pressing it down gently with a broad cork fixed to a long glass rod, taking care to get a uniform and compact mass, not too tight, but free from fissures or

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any time, and the substance be left to macerate in the spirit as long as may be necessary. The valves are made by cutting a groove half way across the ground surfaces of the percolator and stopper respectively; it hence follows that, when the two grooves are in a straight line, the air can enter and percolation will go on; when, however, they are not opposite to each other, the two compartments will be completely stopped off and rendered air-tight. At *a* and *b* in the figure the grooves are shown in the closed position, while at *c* the valve is open.

* This machine must contain no lead, and be so constructed as to admit of the most thorough cleaning.

empty spaces; this done, cover the surface with a thin layer of finely-powdered green glass.

Making the Tincture.—Having ascertained, by reference to the Pharmacopœia, the strength of spirit required and the quantity, which in the case of dry substances will be 40 fluid ounces, but in the case of fresh plants, &c., must be ascertained by a reference to the tables which follow these directions,* proceed as follows:—

1. Take one fourth or one fifth of the entire quantity of spirit required, or, in the case of fresh plants, one-half to one-fourth, and, resting the cork, with the glass rod attached, on the top of the pounded glass, pour the spirit in a gentle stream down the glass rod, so that it may fall on the cork and spread gradually over the surface, without disturbing the pounded glass.

2. Remove the glass rod, put in the stopper, and, in the case of dry substances or of fresh plants from which the juice has been previously extracted as above, close the valves as soon as the liquid commences to drop into the receiver. When working with fresh plants, however, from which the juice has not been pressed, leave the valves open until the following quantities of fluid (or as much of those quantities as the density of the magma will allow the displacement of by one-half the entire quantity of spirit), which will be chiefly juice, have passed through into the receiver. For example, if the moist magma has lost between 30 and 40 per cent. in drying, the weight employed being 4 ounces, let 1½ fluid ounce drop through; if between 40 and 50 per cent., 2 fluid ounces; if between 50 and 70 per cent., 2½ fluid ounces; then close the valves.

3. In all cases, after the valves are closed, let them

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* The remarks following Table 6, p. 24, should be noted before proceeding.

remain so for twenty-four hours, and then open them and allow the fluid to percolate into the receiver until no more drops through.

4. Then add another half, fourth, or fifth part of the spirit in the same cautious way that the first was added, and having displaced the saturated spirit held in suspension by the packed material, close the valves, and let them remain closed for at least six hours, and then re-open the valves and proceed as before, repeating the process again and again, adding an equal part of the required quantity of spirit each time until the whole quantity has been poured into the percolator.

5. When the last quantity has ceased to drop through, remove the material from the percolator, and press strongly.

6. Mix the various portions together, and let stand for twenty-four hours, and then filter.

N.B.—The whole amount of tincture obtained after filtration will never be found to equal the quantity of spirit employed, as there is always some loss during the process. This loss occurs partly through the adhesion of the liquid to the utensils used, and evaporation, and partly through the impossibility of removing the whole of the tincture from the magma by means of pressure.

It is recommended to add spirit of the suitable strength to the extent of 5 per cent. by volume of the quantity of tincture which should result from the process to compensate the loss from the last-named cause, but no other addition of spirit to the tincture can be made without reducing its proper strength. This liquid should be poured over the packed magma before pressure.

PROCESS II.—BY MACERATION PREVIOUS TO PERCOLATION.

This process is a modification of the foregoing, and is necessary in the case of all fresh vegetable substances which have much mucilaginous or viscid juice, and hence will not allow the spirit to pass through readily.

1. Reduce to a pulp, ascertain the percentage of water, and weigh out the moist magma as before.

2. Having ascertained by reference to the Pharmacopœia, the strength of spirit directed for the plant operated upon, and the quantity by reference to the tables, throw the magma loosely into a wide-mouthed stoppered bottle, pour one-third the quantity of spirit over it, and having shaken it thoroughly, allow it to macerate forty-eight hours, shaking occasionally.

3. Decant off any liquid which will pour out from the magma, and press out the remainder, pouring the liquid into the receiver of a percolator, and keeping it in a cool, dark place until the remainder of the process is completed.

4. Remove the mass from the press, and pass it again through the mincing machine, or triturate it lightly in a mortar, and then carefully mix it with twice its bulk of finely-powdered green glass.

5. Pack this mixture of magma and powdered glass in the percolator, percolate with the remainder of the spirit in two or more equal quantities, allowing at least six hours' maceration between each addition of spirit, and finish the process as before.

EXAMPLES OF PLANTS REQUIRING TO BE TREATED BY THIS PROCESS.

Agaricus muscarius, *Allium Cepa*, *Allium sativum*, *Colchicum autumnale*, *Cyclamen Europœum*, *Viola odorata*, *Viola tricolor*, *Viscum album*.

PROCESS III.—BY MACERATION.

This process is preferable in case of some gums, resins, &c., which are almost entirely soluble.

1. Reduce to a coarse powder, or cut into small pieces, and having ascertained the strength of spirit to be used, put the drug with the whole of the spirit into a wide-mouthed bottle and secure the stopper.

2. Allow the contents to macerate for fourteen days, shaking the bottle vigorously once a day.

3. Pour off as much of the liquid as possible, press the residue, mix the liquids, and, having allowed the mixed products to stand twenty-four hours, filter.

EXAMPLES OF DRUGS REQUIRING TO BE TREATED BY THIS PROCESS.

Asafœtida, Castoreum, Guaiacum officinale.

TABLE NO. 1.

Showing the amount of Rectified Spirit required to make Spirit of 40 O.P. with the water contained in each ounce of moist magma, and the amount of Spirit of 40 O.P. to be added in order to make a tincture in which 10 minims will represent approximately 1 grain of the dry plant.

Moisture lost by the fresh plant in drying.	Rectified Spirit required. Fl. oz.	Spirit of 40 O.P. to be added. Fl. oz.
45 per cent.	2·84	1·77
46 ,,	2·90	1·60
47 ,,	2·97	1·44
48 ,,	3·03	1·28
49 ,,	3·09	1·12
50 ,,	3·16	0·96
51 ,,	3·22	0·80
52 ,,	3·28	0·63
53 ,,	3·34	0·47
54 ,,	3·41	0·30
55 ,,	3·47	0·14
56 ,,	3·54	

No fresh plant containing more than about 56 per cent. of water can yield a 1 in 10 tincture with spirit of 40 O.P.; either a more dilute spirit must be used, or a weaker tincture made. It is better, however, to use a more dilute spirit than to make a weaker mother tincture.

TABLE NO. 2.

Amount of Rectified Spirit required to make Spirit of 20 O.P. with the water contained in each ounce of moist magma, and the amount of 20 O.P. spirit to be added.

Moisture lost in drying.	Rectified Spirit required. Fl. oz.	Spirit of 20 O.P. to be added. Fl. oz.
45 per cent.	1·24	3·36
46 ,,	1·27	3·23
47 ,,	1·30	3·10
48 ,,	1·32	2·98
49 ,,	1·35	2·85
50 ,,	1·38	2·72
51 ,,	1·41	2·59
52 ,,	1·44	2·46
53 ,,	1·47	2·33
54 ,,	1·49	2·21
55 ,,	1·52	2·08
56 ,,	1·55	1·95
57 ,,	1·57	1·82
58 ,,	1·60	1·70
59 ,,	1·63	1·57
60 ,,	1·66	1·44
61 ,,	1·69	1·31
62 ,,	1·71	1·18
63 ,,	1·74	1·06
64 ,,	1·77	0·93
65 ,,	1·79	0·80
66 ,,	1·82	0·67
67 ,,	1·85	0·54
68 ,,	1·87	0·42
69 ,,	1·90	0·29
70 ,,	1·93	0·16
71 ,,	1·96	0·03

No fresh plant containing more than about 71 per cent. of water can yield a 1 in 10 tincture with spirit of 20 O.P.; either a more dilute spirit must be used, or a weaker tincture made. It is better, however, to use a more dilute spirit, than to make a weaker mother tincture.

TABLE NO. 3.

Amount of Rectified Spirit required to make Proof Spirit with the water contained in each ounce of moist magma, and the amount of Proof Spirit to be added.

Moisture lost in drying.	Rectified Spirit required. Fl. oz.	Proof Spirit to be added. Fl. oz.
45 per cent.	0·70	3·89
46 ,,	0·72	3·78
47 ,,	0·73	3·67
48 ,,	0·75	3·55
49 ,,	0·76	3·44
50 ,,	0·78	3·32
51 ,,	0·80	3·20
52 ,,	0·81	3·08
53 ,,	0·83	2·96
54 ,,	0·84	2·85
55 ,,	0·86	2·73
56 ,,	0·87	2·62
57 ,,	0·89	2·50
58 ,,	0·90	2·39
59 ,,	0·92	2·28
60 ,,	0·93	2·16
61 ,,	0·95	2·04
62 ,,	0·96	1·93
63 ,,	0·98	1·81
64 ,,	0·99	1·69
65 ,,	1·01	1·58
66 ,,	1·02	1·46
67 ,,	1·04	1·34
68 ,,	1·05	1·22
69 ,,	1·07	1·11

Moisture lost in drying.	Rectified Spirit required. Fl. oz.	Proof Spirit to be added. Fl. oz.
70 per cent.	1·09	0·99
71 ,,	1·10	0·88
72 ,,	1·12	0·76
73 ,,	1·14	0·64
74 ,,	1·15	0·53
75 ,,	1·17	0·41
76 ,,	1·18	0·30
77 ,,	1·20	0·18
78 ,,	1·21	0·07
78·5 ,,	1·22	0·01

No fresh plant containing upwards of about 78·5 per cent. of water can yield a 1 in 10 tincture with proof spirit; either a more dilute spirit must be used, or a weaker tincture made.

It is better, however, to use a more dilute spirit, than to make a weaker mother tincture.

TABLE NO. 4.

Amount of Rectified Spirit required to make *Dilute Alcohol* with the water contained in each ounce of moist magma, and the amount of Dilute Alcohol to be added.

Moisture lost in drying.	Rectified Spirit required. Fl. oz.	Dilute Alcohol to be added. Fl. oz.
45 per cent.	0·45	4·13
46 ,,	0·46	4·02
47 ,,	0·47	3·91
48 ,,	0·48	3·80
49 ,,	0·49	3·69
50 ,,	0·50	3·58
51 ,,	0·51	3·47
52 ,,	0·52	3·36
53 ,,	0·53	3·25
54 ,,	0·54	3·14
55 ,,	0·55	3·03
56 ,,	0·56	2·92

Moisture lost in drying.	Rectified Spirit required. Fl. oz.	Dilute Alcohol to be added. Fl. oz.
57 per cent.	0·57	2·81
58 „	0·58	2·70
59 „	0·59	2·59
60 „	0·60	2·48
61 „	0·61	2·37
62 „	0·62	2·26
63 „	0·63	2·15
64 „	0·64	2·04
65 „	0·65	1·92
66 „	0·66	1·81
67 „	0·67	1·70
68 „	0·68	1·59
69 „	0·69	1·48
70 „	0·70	1·37
71 „	0·71	1·26
72 „	0·72	1·15
73 „	0·73	1·04
74 „	0·74	0·93
75 „	0·75	0·82
76 „	0·76	0·71
77 „	0·77	0·60
78 „	0·78	0·49
79 „	0·79	0·38
80 „	0·80	0·26
81 „	0·81	0·15
82 „	0·82	0·04

No fresh plant containing more than about 82 per cent. of water can yield a 1 in 10 tincture with dilute alcohol As, however, the loss of moisture in some instances has been found to reach 93 or 94 per cent., it is considered more desirable that in such cases a weaker mother tincture should be prepared than a still more diluted alcohol used ; but in every instance a sufficient quantity of such mother tincture must be used in making the first decimal attenuation to make it represent 1 part of dry plant in

100 parts of liquid, and thus uniform with all other first decimal attenuations of vegetable tinctures.

TABLE NO. 5.

Amount of Rectified Spirit required to make Dilute Alcohol with the water contained in each ounce of moist magma, and strength of tinctures resulting from plants containing over 82 per cent. of moisture.

Moisture lost in drying.	Rectified Spirit required. Fl. oz.	Strength of Tincture. Gr. Min.
83 per cent.	0·83	1 in 10·18
84 ,,	0·84	1 ,, 10·94
85 ,,	0·85	1 ,, 11·81
86 ,,	0·86	1 ,, 12·80
87 ,,	0·87	1 ,, 13·95
88 ,,	0·88	1 ,, 15·29
89 ,,	0·89	1 ,, 16·87
90 ,,	0·90	1 ,, 18·76
91 ,,	0·91	1 ,, 21·08
92 ,,	0·92	1 ,, 23·97
93 ,,	0·93	1 ,, 27·69
94 ,,	0·94	1 ,, 32·66

TABLE NO. 6.

Showing the amount of Rectified Spirit required to make Proof Spirit with the water contained in each ounce of moist magma, and the amount of Proof Spirit to be added in order to make a tincture in which 20 minims will represent approximately one grain of the dry plant.

Moisture lost in drying.	Rectified Spirit required. Fl. oz.	Proof Spirit to be added. Fl. oz.
60 per cent.	0·93	5·81
61 ,,	0·95	5·61
62 ,,	0·96	5·40
63 ,,	0·98	5·19
64 ,,	0·99	4·98
65 ,,	1·01	4·77

Moisture lost in drying.	Rectified Spirit required. Fl. oz.	Proof Spirit to be added. Fl. oz.
66 per cent.	1·02	4·56
67 ,,	1·04	4·35
68 ,,	1·05	4·14
69 ,,	1·07	3·93
70 ,,	1·09	3·73
71 ,,	1·10	3·52
72 ,,	1·12	3·31
73 ,,	1·14	3·10
74 ,,	1·15	2·90
75 ,,	1·17	2·69
76 ,,	1·18	2·49
77 ,,	1·20	2·28
78 ,,	1·21	2·07
79 ,,	1·23	1·86
80 ,,	1·25	1·65
81 ,,	1·26	1·45
82 ,,	1·28	1·24
83 ,,	1·29	1·03
84 ,,	1·31	0·83
85 ,,	1·32	0·62
86 ,,	1·34	0·42
87 ,,	1·35	0·21
88 ,,	1·37	

As an example of the method of using the *Tables,* take the following case :—

Suppose a specimen of fresh *Aconite* has been reduced to pulp, and the 100 grains have lost 69·6 grains in drying ; then by reference to the Pharmacopœia it will be seen that *proof spirit* is directed for this tincture. Now, on referring to Table No. 3, it will be found that 1 ounce of moist magma, containing 70 per cent. (the nearest to 69·6)* of water, requires 1·09 fluid ounce of rectified spirit to form proof spirit with the water contained in it, and this quantity, multiplied by 4, gives 4·36 fluid ounces, or the quantity required for the like conversion of the water contained in the 4 ounces of moist magma; hence that amount of rectified spirit must be first poured into a bottle; and as, by reference to Table 3, it will be seen that 0·99 fluid ounce of proof spirit is required to be added for each ounce of moist magma to make a tincture representing 10 per cent. of the dry material where the fresh plant contains 70 per cent. of water, four times this amount, or 3·96 fluid ounces, of proof spirit must be added. This mixed spirit will then be used as directed for making the tincture, and the result will be a tincture of the alcoholic strength of *proof spirit*, and will represent 1 grain of dry *Aconite* in every 10 minims of the tincture and, for reasons before stated, proof spirit should be used for making the first decimal attenuation.

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* One per cent. is the smallest amount of moisture which need be noticed practically, if the loss is below 70 per cent.; hence, when the amount lost is between the per-centages stated, the figures should be taken which come nearest to the exact loss.

The alcoholic solutions (tinctures) of animal substances are, with few exceptions, merely solutions in the proportion of 1 grain in 10 minims of spirit of the strength directed. A few, such as *Cantharis*, are prepared by percolation, and in that case they are treated in precisely the same way as vegetable substances.

INFUSIONS AND DECOCTIONS,

Which, though not generally recognized, are occasionally ordered.

Many plants yield their virtues more fully to water than to alcohol or any other menstruum. There is, however, a great practical difficulty as regards these preparations, and that is, they will not keep; and accordingly, it is still a desideratum that some method should be devised whereby they can be preserved from decomposition. It is probable that the addition of a certain proportion of *alcohol* will effect this, and the subject is suggested as a very suitable one for experiment. In the meantime, these preparations must be made fresh when required. They are prepared as follows:—

1. *Cold Infusions.*—Reduce the drug to a coarse powder, and thoroughly moisten with a little water, then pack it in a percolator, precisely as directed for tincture-making, and let 10 fluid ounces of distilled water for every 1 ounce of dry material be passed through the percolator in the ordinary way.

2. *Hot Infusions.*—Prepare the medicinal substance as above, and tie it loosely in a bag of clear, well-washed book-muslin, and then pour 10 fluid ounces of boiling distilled water for every 1 ounce of dry material into an infusion pot; place the bag containing the substance on the diaphragm, cover over the vessel, and keep it in a warm place for an hour, when the fluid may be poured off, and that retained in the bag squeezed out, and the two mixed together and filtered.

3. *Decoctions.*—Prepare the drug as before, put it into a porcelain dish, then pour 10 fluid ounces of distilled water for every 1 ounce of dry material over it; place the dish over a water-bath, raise it to 200° F., and keep it at that temperature for half an hour, when the fluid may be decanted and filtered, and the loss by evaporation made good.

If attenuations of these are required, they must be made as soon as the preparations are ready; pure distilled water being used for the 1st decimal and centesimal attenuations, dilute alcohol for the 3rd decimal, and rectified spirit for the 2nd centesimal and upwards.

II.—TRITURATIONS.

This form of preparation was originally designed by Hahnemann, who also published minute directions as to how it should be performed. His method is still adhered to, and there is only one alteration which may with advantage be made, and that is in the proportion of sugar of milk to be used at each stage of the process. Hahnemann recommends 1 grain of the substance to be triturated with 99 grains of sugar of milk, and the process lasts one hour. It is, however, preferable to use the proportion of 1 grain of medicine to 9 of sugar of milk, and in this way each decimal trituration after the first will occupy forty minutes, or each centesimal—being equal to two decimal triturations—to the making of which Hahnemann allotted one hour, will now occupy one hour and twenty minutes. The object of this change is chiefly to insure a more thorough preparation, it being found by the microscope that the addition of so large a proportion of sugar of milk at one time (33 grains to 1 grain of medicine) renders it more difficult to reduce the size of the particles of the medicine, especially if they are hard, and thus deteriorates the value of the trituration. Since Hahnemann avowedly invented his process for the purpose of reducing the drug to the finest possible powder, the modification proposed is merely carrying out his own ideas to a higher degree of perfection.

For the first decimal trituration the steps of the process are as follows: Weigh any number of grains (not exceeding 100 grains) of the medicinal substance, which should be in fine powder, or, in the case of some metals, in thin leaf, and then weigh separately an equal number of grains of perfectly pure sugar of milk in coarse powder. Transfer the medicinal substance into a perfectly clean and dry Wedgwood mortar, then place the milk sugar upon it, and mix the two together with a horn or ivory spatula, or, in the case of metallic leaf, spread the milk sugar evenly over the surface. Using a pestle of the same material as the mortar, rub the mixture thoroughly and carefully during six minutes, taking care that it should be not only mixed thoroughly by the steady circular movement so well known to pharmaceutists in mixing powders, but also that the hard, grinding motion which is employed in incorporating pill-mass should be effectively used, so as to break up all large and hard particles. At the end of the six minutes, scrape the pestle and mortar carefully with the spatula, so that nothing shall be left adhering to them, and stir the mixture again—a process which will usually occupy about four minutes. Again rub and stir the mixture with the pestle for six minutes as before, and again scrape all the particles off the mortar and pestle, and thus complete the first stage of the process.

As the reducing of the medicine to the finest possible powder is a most essential point in this method of preparation, and as it is very difficult to effect this after a large proportion of sugar of milk has been added, a small portion of the trituration should be carefully examined under the microscope at this stage, and if the particles are found to be very unequal in size, the trituration and scraping should be continued until the reduction of the particles to a uniform degree of fineness is complete. Now add three times as many grains of coarsely-powdered sugar of milk* as were used in the first instance, stir it well in with the triturated material, and proceed as before,—viz., rubbing for six minutes, scraping and mixing for four minutes, again rubbing for six minutes, and scraping as above. Then add five times the number of grains used at first, of finely-powdered sugar of milk, rub for six minutes, scrape and mix for four minutes, and again rub for six minutes, after which the trituration may be viewed as complete, and having once more scraped the whole together, it should be transferred to a perfectly clean, dry, glass bottle, carefully corked, and labelled 1^x.

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* In the case of metallic leaf it may be necessary to add a little of this second quantity of coarse milk sugar before all the particles can be brought under the pestle; in this case the smallest quantity should be added at a time, so as to avoid increasing the bulk materially, before perfect reduction of the metal is secured.

For subsequent triturations the steps are as follows:—Take one part by weight (not exceeding 100 grains) of the previous trituration, and then weigh separately nine times as many grains of perfectly pure sugar of milk in fine powder. Transfer half the quantity of the sugar of milk into a mortar as above, then place the triturated substance on the sugar of milk, and mix the two together with a horn or ivory spatula. Rub the mixture as directed for six minutes, scrape the mortar and pestle carefully with the spatula, so that nothing is left adhering to them. Again rub the mixture with the pestle for six minutes as before, and again scrape and mix thoroughly, when the first stage of the process is complete. Now add the remainder of the sugar of milk, stir it well in with the triturated material, and proceed as before—viz., rubbing for six minutes, scraping and mixing for four minutes, and again rubbing for six minutes, after which the pestle and mortar may be scraped, and the triturated product bottled, corked, and labelled.

In consequence of the extreme difficulty with which pestles and mortars can be cleaned to the degree necessary for our refined processes, all careful homœopathic chemists procure perfectly new ones for each substance and then label them with the name of the medicine, and never use them for any other purpose; and even, notwithstanding this, it is necessary to be very careful in the thorough washing and cleansing of the apparatus, since a very small quantity of 1^x trituration, for example, would injure the perfection of the 3rd centesimal.

All insoluble substances are submitted to this process; and as it is carried on as far as the 3rd centesimal attenuation (6^x), it follows that this thorough rubbing and mixing is continued until the medicine constitutes only the one-millionth part of the mixture. At this point experience has shown that even the most insoluble substances have become soluble both in water and alcohol; or, if not actually soluble, they are reduced to such minute particles that they are capable of permanent suspension through the fluid, so that it retains their medicinal virtues, and answers all the purposes of a perfect solution.

Several attempts have been made to invent machines for triturating the drugs, some of which are very ingenious, and to a certain extent effective. The best we are acquainted with in this country is that of Mr. Hewitt; but even this cannot compete with the human hand: a careful microscopic comparison between machine and hand-made preparations showed conclusively that when the medicinal substance was hard, and in considerable pieces, such as *Carbo vegetabilis* and *Aurum foliatum*, Mr. Hewitt's machine failed to reduce the particles to the same uniformly minute size which was attained in the hand-made triturations; when, however, the medicine was already in the pulverulent form, as *Mercurius biniodatus*, there appeared but little difference between the two modes of triturating. In consequence of this no machine yet known can be recommended to be used in making the early triturations, at least of all substances which are not already in the form of impalpable powder, or known to be very friable; and when used for these the heaviest weight should be applied.

III.—LIQUID ATTENUATIONS.

Systematic dilution of medicines according to a fixed scale constitutes another of the peculiarities of homœopathic pharmacy. When Hahnemann had convinced himself of the curative power of infinitesimal doses he devised and carried out the plan of making a series of preparations of each medicine, every one of which should contain exactly 100 times less of the drug than the one before it, and this constitutes the *centesimal scale.* His followers, however, being desirous of having preparations of a strength midway between those recommended by Hahnemann, adopted the plan of diluting in the proportion of 1 in 10 in place of 1 in 100, thus constituting the *decimal scale.* In consequence of this very great confusion has arisen; and it is most essential that one or other should be adopted exclusively. After a careful review of all the arguments in favour of both scales, it has been determined to adopt the *centesimal* scale for prescribing, while the *decimal* possesses so many advantages in the preparation of the drugs that it should be always followed in the making of the triturations and other attenuations. When referring to the subject of *designating* the attenuations, an easy method will be described by which to avoid the possibility of any confusion arising from the use of one scale for preparing and the other for prescribing. The method of making the attenuations is as follows:—

Take a perfectly clean new bottle (say a half-ounce phial), fit a good new cork into it, and then, having removed the cork, pour in 20 minims* of the mother tincture, then add 180 minims of spirit of the same alcoholic strength as that with which the mother tincture was prepared, cork the bottle, and grasping it in the right hand, with the thumb held firmly over the cork, shake it well, letting each shake terminate in a jerk by striking the closed right hand against the open palm of the left hand; having given several such shakes, the attenuation is finished, and should be marked 1^x: 20 minims of 1^x mixed and well shaken with 180 minims of spirit, will then form 2^x or 1; and 20 minims of 1 with 180 minims of spirit, well shaken, will form 3^x; and so on up to the highest attenuation required.†

The strength of the spirit used for the attenuations must be carefully attended to according to the following rules:—

I.—The first attenuation made from a *trituration* (which will be 7^x) must be made by dissolving 10 grains of the 3rd centesimal trituration in each hundred minims of distilled water to which 5 per cent. of rectified spirit has been added. This can be accomplished by allowing the bottle to stand for a few hours with occasional shaking until the contents are dissolved.

a. The next attenuation, viz., 4, must be made with 20 O.P. spirit.

b. The next, viz., 9^x, and all higher attenuations, must be made with rectified spirit, *i.e.* 60 O.P.

II.—The first attenuation of any *mother tincture* (which will always be 1^x) must be made with spirit of the same strength as that used in making the mother tincture: hence—

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* See remarks following Table 4, p. 22.

† It is recommended to keep all the attenuations in glass-stoppered bottles.

a. When the *mother tincture* is made with proof spirit, *attenuation* 1^{x} must be made also with proof spirit, *attenuation* 1 with spirit 20 O.P., *attenuation* 3^{x} *and all above that* with rectified spirit.

b. When the *mother tincture* is made with *dilute alcohol*, *attenuation* 1^{x} must be made with *dilute alcohol,* 1 with proof spirit, 3^{x} with spirit 20 O.P., *and all above that* with rectified spirit.

c. When the *mother tincture* is made with *spirit* 20 or 40 O.P., *attenuation* 1^{x} must be made with a corresponding strength of spirit, 1 *and all above that* with rectified spirit.

d. When the *mother tincture* is made with *rectified* spirit, the same will be used for all the attenuations.

e. When the *mother tincture* is made with *absolute alcohol*, *attenuation* 1^{x} must be made with *absolute alcohol, and all above that* with rectified spirit.

III. The attenuations made from *watery solutions* require to be modified by so many causes, such as the solubility of the medicine in alcohol, the tendency or otherwise to any chemical action between the alcohol and the substance to be attenuated, that the rule is in these cases laid down separately for each particular substance.

THE DESIGNATION OF THE ATTENUATIONS.

Hitherto great irregularity has existed in the methods of designating the attenuations, and as a consequence much confusion has resulted.

By some homœopathic chemists the numbers 1, 2, 3, &c., have been used to denote the *decimal* scale, while others adhered to Hahnemann's plan and confined their use to *centesimal preparations*, using 1^x, 2^x, 3^x, &c., to denote the *decimal attenuations*.

Some medical men, again, have used A to indicate 1^x, and B to denote 3^x, and the fact is mentioned here that chemists getting prescriptions so marked may understand what is meant, but it is advisable that they should not adopt these letters in marking medicines unless specially directed so to do. To prevent confusion homœopathic practitioners are advised to adopt the *centesimal scale* only. The reasons for this are numerous, among which the following may be noted as of themselves sufficient to decide the matter:—

1. All or nearly all employ the centesimal scale exclusively in denoting the high attenuations.

2. There are only two attenuations, viz., the 1st and 3rd decimal, which have been much used, and which could not be equally well notated centesimally.

It is necessary now to advert to a fact which is often lost sight of, and yet which is very important for all those who prescribe the low attenuations, and that is the following:—

The process of attenuation always commences from a point termed zero, and marked ϕ or θ; but the actual amount of medicinal substance contained in the zero differs materially, thus:—

In all instances where *trituration* or *solution in distilled water* is had recourse to, the ϕ represents the pure medicinal substance; *e.g.*, *Acid. Nitric.* ϕ, *Arsen.* ϕ, *Kali Iod.* ϕ, *Brom.* ϕ, *Carbo. Veg.* ϕ, &c., always refer to the pure substance itself; and hence, in such cases, the 1st decimal attenuation contains 10 per cent. of the pure drug. On the contrary, in all cases where tinctures are made, *the strong tincture and not the crude material is marked* ϕ, and, as a consequence, the 1st decimal attenuation contains 10 per cent. of the tincture, and not 10 per cent. of the pure drug. Since in the present Pharmacopœia the proportion of 1 in 10 has been fixed, whenever possible, for the strength of the *mother tincture* it follows *that the* 1*st decimal attenuation* of a *mother tincture* corresponds in medicinal strength to the 1*st centesimal attenuation* of a trituration or watery solution; and when it is impossible to make the mother tincture in the proportion of 1 in 10, the first decimal attenuation is still made to represent 1 in 100 of the drug by using a proportionate quantity of such mother tincture. For example, when the mother tincture is 1 in 15, as may happen with *Belladonna* or *Calendula*, 15 measures of such tincture would require 85 measures of the suitable spirit to make the first decimal.

This uniformity of strength of the mother tinctures thus gets rid of much of the uncertainty which has hitherto existed as to the actual quantity of medicine contained in these preparations; but it would have been more satisfactory to have adopted one uniform standard for all. It was found, however, after much deliberation, that a change of this kind would, for a time at least, lead to so much confusion that it has been deemed advisable not to make any such radical change.

It is very necessary to adopt a uniform use of the sign ϕ, since much confusion is caused by different persons employing it in different senses. The following are the rules for its application:—

1. It is used principally to denote the strongest officinal tincture, as *Acon.* ϕ, *Arnica* ϕ, *Canth.* ϕ; and these, according to this Pharmacopœia, have an almost uniform strength of 1 in 10.

2. It is used to denote the strongest officinal preparation of any substance when its actual strength is unknown,

as *Caust.* ϕ, together with the animal poisons, as *Apis* ϕ, *Aranea* ϕ, *Lachesis* ϕ, &c.

3. It should never be used to denote 1^x solution of any substance in alcohol or water, when the crude substance itself has a definite chemical composition; for example, *Brom.* ϕ, *Glonoin.* ϕ, *Kali Iod.* ϕ, *Kreas.* ϕ, *Merc. Cor.* ϕ, *Tereb.* ϕ, &c., should always mean the pure substances themselves, and their strongest officinal solutions should be denoted *Brom.* 1^x, *Glonoin.* 1^x, *Kali Iod.* 1^x, *Kreas.* 1^x, *Merc. Cor.* 1^x, *Tereb.* 1^x, &c.

In short, the sign ϕ, *when meaning mother tincture*, should be strictly limited to the strongest solutions in alcohol of substances which have not a definite chemical composition in their crude state.

From what has been stated it will be seen that ϕ means the crude substance in the case of all *the officinal acids*, of all substances which are *triturated*, and in the case of the following medicines, viz.:—

Alumen
Ammon. carb.
Ammon. caust.
Ammon. mur.
Argent. nit.
Arsenicum
Atropinum
Atrop. sulph.
Aur. mur.
Bar. acet.
Bar. mur.
Borax
Bromium
Calc. acet.
Calc. caust.
Chin. sulph.
Cinch. sulph.
Codeinum
Copaiba
Cupr. acet.
Cupr. sulph.
Ferr. acet.
Ferr. iod.
Glonoinum
Iodium
Kali bich.
Kali brom.
Kali carb.
Kali chlor.
Kali iod.
Kali nit.
Kreasotum
Mag. mur.
Mag. sulph.
Mang. acet.
Merc. corr.
Morphinum
Morph. acet.
Morph. mur.
Narcotinum
Natr. carb.
Natr. mur.
Natr. nit.
Natr. sulph.
Ol. animale
Ol. crotonis
Phosphorus
Plat. mur.
Plumb. acet.
Plumb. nit.
Strychninum
Sulphur
Terebinth.
Veratrinum
Zinc. sulph.

As regards marking the attenuations, the following plan has been adopted as the least likely to be misunderstood:—

$$\phi.\ 1^x;\ 1.\ 3^x;\ 2.\ 5^x;\ 3.\ 7^x;\ 4.\ 9^x;\ 5.\ 11^x;\ 6,\ \&c.$$

$$\text{Or } \phi.\ \frac{1}{x};\ 1.\ \frac{3}{x};\ 2.\ \frac{5}{x};\ 3.\ \frac{7}{x};\ 4.\ \frac{9}{x};\ 5.\ \frac{11}{x};\ 6,\ \&c.$$

With a view to obtain uniformity it is recommended that the first example, viz., 1^x, 3^x, &c., &c., be the one followed by those who can do so without inconvenience.

Since only two decimal attenuations are at all frequently prescribed—namely, 1^x and 3^x—there can be no serious objection to notating these A and B; but the figure with the x at the side is more consistent, since the chemists must use the decimal notation to mark the higher intermediate steps in the process of attenuation.

It is directed that in future no chemist will send out a decimal attenuation without the x being distinctly marked; and that no practitioner will prescribe a decimal attenuation without the distinctive mark; and also that all will abstain from using the decimal notation wherever the attenuation required can be expressed centesimally; for example, that 2^x shall never be used in place of 1, 4^x in place of 2, 6^x in place of 3, &c.

A careful attention to these simple rules will save a large amount of confusion.

THE PRESERVATION OF THE MEDICINES.

A very few words will suffice upon this head. All that has already been written about the care necessary to avoid all exposure of the medicinal substances to damp, dust, strong smells, bright light, &c., during their preparation, applies equally to the preparations themselves after they are completed. All strong tinctures should be kept in a place entirely separate from the attenuations, and should be preserved in well-stoppered glass bottles, and kept constantly in the dark, in a dry, cool place. The attenuations should also be preserved in stoppered bottles in boxes or drawers; and it is a good plan to appropriate a separate box or drawer to each medicine.

It is not necessary to keep the whole series of attenuations, as many of them are very seldom prescribed. The following should, however, be always on hand—viz., all below 7^x, then 4, 5, 6, 9, 12, 18, 24, 30.

THE DISPENSING OF THE PREPARATIONS.

The forms in which homœopathic medicines are dispensed are Powders, Tinctures, Pilules, and Globules.

The powders consist of sugar of milk, to which has been added a given quantity of the trituration prescribed, or on which has been dropped a given number of drops of the tincture. It is necessary, therefore, to remember that only those attenuations can be dispensed in the form of powder which have been made with proof or stronger spirit (unless specially prepared as *tincture-trituration*, see p. 39). If prepared with a weaker spirit, the sugar of milk will be partially dissolved, and thus a most inconvenient preparation will result.

The tinctures themselves are often dispensed either in bottles with directions to mix so many drops in a given quantity of water, or the prescriber orders so many drops to be mixed with so many ounces of water and sent out as a mixture.

In order to possess a convenient form for administering fractions of a drop, Hahnemann adopted the plan of saturating sugar *globules* with the attenuated tincture, and then directing so many of these to be taken at a dose. Since Hahnemann's time a large sugar globule, termed *pilule*, has been introduced, and is much used both in this country and America.

Another form of powder has been recommended in America, and used occasionally in this country, and is at times very convenient. It is called *tincture-trituration*, and is prepared as follows: A weighed quantity of sugar of milk, for instance 2 ounces and 85 grains, is put into a mortar, and 1 fluid ounce of the tincture (usually the mother tincture) is poured over it, and the whole is well rubbed together, forming a soft paste; this is put on one side in a dry place, lightly covered with paper to exclude dust, but not to prevent evaporation; and as the paste gets drier it is again and again rubbed up well and scraped from the mortar and pestle until it becomes quite dry, when a second ounce of liquid is added and the operation repeated. When dry the product is weighed, the weight increased to 960 grains by adding sugar of milk, and the whole then triturated for a quarter of an hour. It is put up in bottles and preserved like any other preparation. From the way it is made it will be obvious that 1 grain of a tincture-trituration will contain as much of the medicine as 1 minim of the tincture itself.

Beyond the convenience of carrying it about and dispensing it as powders, there is no advantage in the tincture-trituration over the tincture; and it should never be used for the purpose of making attenuations, which should invariably be prepared direct from the tinctures themselves.

A few words must be said respecting the obtaining and medicating pilules and globules.

These preparations are made of sugar, and it is always better to procure them from a manufacturer who prepares them especially for homœopathic chemists rather than from the confectioner, who, having frequently to colour his preparations, would be very apt to employ his machinery indiscriminately for the coloured and the colourless, and hence the latter would not be sufficiently pure for our purpose.

In medicating the pilules and globules, a suitable quantity of them should be placed in a bottle, and the tincture with which they are to be saturated should be poured over them in sufficient quantity to thoroughly moisten every one of them; and the regular admixture of the tincture and the pilules or globules should be insured by repeatedly shaking, or, better still, by grasping the bottle firmly and giving the hand a rapid circular motion, holding the bottle first perpendicularly and then horizontally. Some chemists fill the bottles with the tincture and leave the pilules and globules to macerate for several days; while others carefully ascertain how much they will absorb, and add exactly that quantity. Whichever plan is followed, the greatest possible care is required to secure perfect saturation. The latter process, when carefully carried out, has the advantage of avoiding all exposure of the pilules and globules in drying; whereas, if the former plan is followed, it is necessary after a time to pour off the excess of tincture, and to dry the pilules and globules between sheets of filtering paper—a plan which is objectionable on many accounts.

It is found advantageous, in medicating pilules and globules with attenuations which are usually prepared with strong alcohol, to make those required specially with 20 O.P. spirit, which will be more readily absorbed than stronger spirit. If, however, pilules or globules of a mother tincture or low attenuation prepared with stronger spirit than 20 O.P. are required, it is a better plan to avoid precipitation of the tincture through reduction of the spirit, by first adding about 10 or 15 minims of distilled water to each pound of pilules or globules, according to their hardness, and shaking them in the manner described, so that they may be uniformly moistened, and then setting them aside for a few minutes, when they will be found to absorb the strong spirit more readily.

The requisite quantity of tincture should be added in two equal portions, allowing an interval of about twenty-four hours to elapse between each, so that the pilules or globules may dry before the second portion is added.

On the other hand, when it is desired to medicate pilules or globules with a tincture which is of less alcoholic strength than 20 O.P. spirit—e.g. proof spirit—a sufficient quantity of rectified spirit to bring the strength up to 20 O.P. should first be added to the pilules or globules, and then the tincture, in two portions, as above described.

Before closing these practical directions it will be well to say a little about the proper method of cleaning the utensils employed by homœopathic chemists. It has been already stated that all careful homœopathic chemists set apart separate pestles and mortars for each medicine which has to be triturated.

All the mother tinctures, and especially all the attenuations, should in the first place be put into perfectly new bottles, closed with perfectly new corks, or better still with glass stoppers, and these bottles should never in future be filled with any other medicine or attenuation.

It must happen, however, that measure-glasses, bottles which have contained mixtures, &c., are required to be used again and again, and hence it is well to know how they can be thoroughly freed from every trace of the medicine which they have previously contained. This may be effectually accomplished by *washing the bottle in* *an ascending stream of water* in place of a descending stream, as is almost universally employed. The chemist should have a fine nozzle and stopcock adapted to the water cistern in his laboratory (over the sink), and so arranged that the stream of water ascends like the jet of a fountain. He then washes his bottle or glass, as the case may be, in the usual manner, carefully removing every visible impurity, and then, while the vessel is still wet, he should hold it over the fine nozzle (which must be fine enough to pass through the neck of the smallest sized bottle he has to wash), and while in that position open the stopcock and allow the stream to strike against the bottom of the glass or bottle he is washing; in this way, as soon as the water mixes with the remains of the medicine, it flows down the sides of the vessel and escapes into the sink, and in a very short time not the slightest trace of medicine will remain in the glass or bottle. It can then be drained and dried in the ordinary way.

ON THE DOSE.

It is essential to the principles of Homœopathy that medicines should be given in doses too small to produce their physiological effects. As regards minuteness of dose, however, there is no fixed limit; and hence it follows that all doses have their advocates, ranging from a few drops of the mother tincture up to the highest attenuations.

ON WRITING PRESCRIPTIONS.

The peculiarities of homœopathic pharmacy entail certain peculiarities in prescribing which must be noticed.

1. Since there are numerous preparations of each

medicine, it is essentially necessary to mark this after the name of the medicine. For example, it is not sufficient to order *Belladonna.* The name must be followed by the sign denoting the particular preparation. Thus :—

Bell. φ, Bell. 3^{x}, Bell. 6, Bell. 30,

would denote respectively *the mother tincture, the third decimal, the sixth centesimal, and the thirtieth centesimal attenuations* of the medicine.

2. After the sign denoting the preparation must follow the usual signs for the quantity ; and in connection with it must be a notification as to whether *triturations, tinctures, pilules,* or *globules* are wanted. Thus :—

℞ Merc. viv. 3^{x} gr. ij. = 2 *grains of 3rd decimal trituration.*

℞ Merc. viv. 6 gtt. ij. = 2 *drops of 6th centesimal tincture.*

℞ Merc. viv. 6 pil. ij. = 2 *pilules of 6th centesimal attenuation.*

℞ Merc. viv. 30 gl. iij. = 3 *globules of 30th centesimal attenuation.*

These may be written thus :—

℞ Merc. viv. gr. $2/_{3^{x}}$, gtt. $2/_{6}$, pil. $2/_{6}$, gl. $3/_{30}$.

Following these necessary rules, the homœopathic prescriptions will assume some such forms as these :—

For Powders.

℞ Aconiti 3^{x} gtt. iij ;
Sacchar. Lactis, gr. vj. M.
Fiat pulvis. Mitte tales iv.

Sig^{t}.—Dissolve a powder in dessert-spoonfuls of water and take one dessert-spoonful every hours.

For Mixtures.

℞ Belladonnæ 12, gtt. vj ;
Aquæ destill., ℥vj. M.

Sig^t.—A dessert-spoonful to be taken every   hours.

℞.—Nucis Vomicæ 6, gtt. xij
Aquæ destill., ℥viij. M.

Sig^t.—A tablespoonful to be taken three times a day. And in the event of a medicine being ordered without any strength being indicated, if the physician cannot be communicated with, the chemist shall dispense No. 3 or 5 according to the character of the prescription, but not *ϕ* or 1^x, which should only be dispensed when specially ordered.

Two things are especially to be recommended—viz., that all prescriptions should be written in such a manner that any homœopathic chemist may read them with certainty and facility; and that the directions for taking the medicines should be so written that both the patient and chemist can understand them.

ARTICLES EMPLOYED IN CHEMICAL TESTING.

ALCOHOL.—C_2H_6O.

ABSOLUTE ALCOHOL, prepared as directed p. 4.

BENZOL.—C_6H_6.

A colourless volatile liquid, obtained from coal tar. Specific gravity 0·85.

BORACIC ACID.—H_3BO_3.

Tests.—Soluble in alcohol. The solution burns with a green flame.

CHLORIDE OF BARIUM.—$BaCl_2.2H_2O$.

COPPER FOIL.

Pure metallic Copper, thin and bright.

ETHER.—$C_4H_{10}O$.

ABSOLUTE ETHER.

Take of Ether	of each	2 pints
Distilled Water		
Lime, recently burned		$\frac{1}{4}$ ounce
Chloride of Calcium		4 ounces

Put the ether with one pint of the water into a bottle, and shake them together; allow them to remain at rest for a few minutes, and when the two liquids have separated, decant off the supernatant ether; mix this with the remainder of the water, and again, after separation, decant as before. Put now the washed ether, together with the lime and chloride of calcium, into a retort to which a receiver is closely attached, let them stand for twenty-four hours, then distil with the aid of a gentle heat.

Test.—Specific gravity not exceeding 0·720.

GOLD, FINE.

Gold, free from metallic impurities.

HYDROFLUOSILICIC ACID.—$2HF.SiF_4$.

HYPOSULPHITE OF SODA.—$Na_2H_2S_2O_4.4H_2O$.

Test.—24·8 grains decolorise 100 measures of the volumetric solution of Iodine.

INDIGO.—C_8H_5NO.

A blue pigment prepared from various species of Indigofera, *Linn.*

ISINGLASS.

The swimming bladder or sound of various species of Acipenser, *Linn.*, prepared and cut into fine shreds.

LITMUS.

A blue pigment prepared from various species of Roccella, *DC.*

LITMUS PAPER, BLUE.

Unsized white paper steeped in tincture of litmus, and dried by exposure to the air.

LITMUS PAPER, RED.

Unsized white paper steeped in tincture of litmus which has been previously reddened by the addition of a very minute quantity of sulphuric acid, and dried by exposure to the air.

LITMUS TINCTURE.

Take of Litmus in powder - -	1 ounce
Proof Spirit - - -	10 fluid ounces

Macerate for two days in a closed vessel, and filter.

MUCILAGE OF STARCH.

Take of Starch - - - -	60 grains
Distilled Water - -	5 fluid ounces.

Triturate the starch with the water, gradually added, then boil for a few minutes, constantly stirring.

OXALIC ACID, PURIFIED.—$H_2C_2O_4.2H_2O$.

OXALATE OF AMMONIA.—$(NH_4)_2C_2O_4.H_2O$.

Take of Purified Oxalic Acid	-	1 ounce
Boiling Distilled Water	-	8 fluid ounces
Carbonate of Ammonia	-	a sufficiency

Dissolve the oxalic acid in the water, neutralise the solution at a boiling temperature, filter it while still hot and set it by that crystals may form as it cools.

PLASTER OF PARIS.

Native sulphate of lime, $CaSO_4.2H_2O$, deprived of water by heat.

PLATINUM BLACK.

Platinum in a state of minute division, obtained by adding excess of carbonate of soda and some sugar to solution of perchloride of platinum, and boiling until a black precipitate is formed, which is washed and dried.

PLATINUM FOIL.

RED PRUSSIATE OF POTASH.—$K_6Fe_2C_{12}N_{12}$.

Test.—Its solution in water gives no precipitate with persulphate of iron.

SULPHATE OF COPPER, ANHYDROUS.—$CuSO_4$.

Sulphate of copper deprived of its water by a heat of 400°.

Characters.—A yellowish white powder, which becomes blue when moistened with water.

SULPHIDE OF IRON.—FeS.

Produced by applying the end of a rod of iron, heated to a white heat at a blacksmith's forge, to the end of a roll of sulphur, and allowing the sulphide of iron as it is formed to run into a vessel of water.

SULPHURETTED HYDROGEN.—H_2S.

Take of Sulphide of Iron	½ ounce
Water	4 fluid ounces
Sulphuric Acid	a sufficiency

Place the sulphide of iron and the water in a gas-bottle closed with a cork perforated by two holes, through one of which passes air-tight a funnel tube of sufficient length to dip into the water, and through the other a tube for giving exit to the gas. Through the former pour from time to time a little of the acid, so as to develop the sulphuretted hydrogen as it may be required.

TIN, GRANULATED.

Grain tin, reduced to small fragments by fusing and pouring into cold water.

TURMERIC.

The rhizome of Curcuma longa, *Linn.*

TURMERIC PAPER.

Unsized white paper steeped in tincture of turmeric and dried by exposure to the air.

TURMERIC TINCTURE.

Take of Turmeric, bruised	1 ounce
Rectified Spirit	6 fluid ounces

Macerate for seven days in a closed vessel, and filter.

TEST SOLUTIONS.

SOLUTION OF ACETATE OF COPPER.

Take of Subacetate of Copper of commerce, in fine powder	½ ounce
Acetic Acid (B.P. sp. gr. 1·044)	1 fluid ounce
Distilled Water - - -	a sufficiency

Dilute the acid with half a fluid ounce of the water; digest the subacetate of copper in the mixture at a temperature not exceeding 212° with repeated stirring, and continue the heat until a dry residue is obtained. Digest this in four ounces of boiling distilled water, and by the addition of more of the water make up the solution to five fluid ounces. Filter it.

SOLUTION OF ACETATE OF POTASH.

Take of Acetate of Potash - -	½ ounce
Distilled Water - - -	5 fluid ounces

Dissolve and filter.

SOLUTION OF ACETATE OF SODA.

Take of Acetate of Soda - - -	½ ounce
Distilled Water - - -	5 fluid ounces

Dissolve and filter.

SOLUTION OF ALBUMEN.

Take the White of one Egg	
Distilled Water - -	4 fluid ounces

Mix by trituration in a mortar, and filter through clean tow first moistened with distilled water.

This solution must be recently prepared.

SOLUTION OF AMMONIO-NITRATE OF SILVER.

Take of Nitrate of Silver, in crystals	¼ ounce
Solution of Ammonia (B.P. sp. gr. 0·959)	½ fluid ounce, or a sufficiency
Distilled Water	a sufficiency

Dissolve the nitrate of silver in eight fluid ounces of the water, and to the solution add the ammonia until the precipitate first formed is nearly dissolved. Clear the solution by filtration, and then add distilled water, so that the bulk may be ten fluid ounces.

SOLUTION OF AMMONIO-SULPHATE OF COPPER.

Take of Sulphate of Copper, in crystals	½ ounce
Solution of Ammonia (B. P. sp. gr. 0·959)	a sufficiency
Distilled Water	a sufficiency

Dissolve the sulphate of copper in eight fluid ounces of the water, and to the solution add the ammonia until the precipitate first formed is nearly dissolved. Clear the solution by filtration, and then add distilled water, so that the bulk may be ten fluid ounces.

SOLUTION OF AMMONIO-SULPHATE OF MAGNESIA.

Take of Sulphate of Magnesia	1 ounce
Chloride of Ammonium	½ ounce
Solution of Ammonia (B. P. sp. gr. 0·959)	½ fluid ounce
Distilled Water	a sufficiency

Dissolve the sulphate of magnesia and chloride of ammonium in eight fluid ounces of the water, and to the solution add the ammonia, and as much distilled water as will make up the bulk to ten fluid ounces. Filter it.

SOLUTION OF BORACIC ACID.

Take of Boracic Acid	50 grains
Rectified Spirit	1 fluid ounce

Dissolve and filter.

Or use the 1^{x} attenuation.

SOLUTION OF BROMINE.

Take of Bromine	10 minims
Distilled Water	5 fluid ounces

Place the bromine in a bottle furnished with a well-fitting stopper, pour on the water, and shake several times. Keep it excluded from the light.

Or use the 1 attenuation.

SOLUTION OF CARBONATE OF AMMONIA.

Take of Carbonate of Ammonia, in small pieces	½ ounce
Distilled Water	10 fluid ounces

Dissolve and filter.

SOLUTION OF CHLORIDE OF AMMONIUM.

Take of Chloride of Ammonium	1 ounce
Distilled Water	10 fluid ounces

Dissolve and filter.

SOLUTION OF CHLORIDE OF BARIUM.

Take of Chloride of Barium, in crystals	1 ounce
Distilled Water	10 fluid ounces

Dissolve and filter.

SOLUTION OF CHLORIDE OF CALCIUM.

Take of Chloride of Calcium - -	1 ounce
Distilled Water - - -	10 fluid ounces

Dissolve and filter.

SOLUTION (SATURATED) OF CHLORIDE OF CALCIUM.

Take of Chloride of Calcium - -	4 ounces
Distilled Water - - -	5 fluid ounces

Dissolve and filter.

SOLUTION OF CHLORIDE OF GOLD.

Take of Aurum Muriaticum, 1^{x} -	2 fluid drachms
Distilled Water - -	3 fluid drachms

Mix.

SOLUTION OF CHLORIDE OF TIN.

Take of Granulated Tin - -	1 ounce
Hydrochloric Acid - -	3 fluid ounces
Distilled Water - - -	a sufficiency

Dilute the acid in a flask with one fluid ounce of the water, and, having added the tin, apply a moderate heat until gas ceases to be evolved. Add as much of the water as will make up the bulk to five fluid ounces, and transfer the solution, together with the undissolved tin, to a bottle with an accurately ground stopper.

SOLUTION OF GELATINE.

Take of Isinglass, in shreds - -	50 grains
Warm Distilled Water -	5 fluid ounces

Mix and digest for half an hour on a water-bath with repeated shaking, and filter through clean tow moistened with distilled water.

SOLUTION OF IODATE OF POTASH.

Take of Iodine	50 grains
Chlorate of Potash	50 grains
Nitric Acid	8 minims
Distilled Water	10½ fluid ounces

Rub the iodine and chlorate of potash together to a fine powder; place the mixture in a Florence flask, and, having poured upon it half an ounce of the water acidulated with the nitric acid, digest at a gentle heat until the colour of the iodine disappears. Boil for one minute; then transfer the contents of the flask to a capsule, and evaporate to perfect dryness at 212°. Finally dissolve the residue in the remaining ten ounces of distilled water; filter the solution, and keep it in a stoppered bottle.

SOLUTION OF IODIDE OF POTASSIUM.

Take of Iodide of Potassium	1 ounce
Distilled Water	10 fluid ounces

Dissolve and filter.

SOLUTION OF LIME.

LIME WATER.

Take of Slaked Lime	2 ounces
Distilled Water	1 gallon

Put the lime into a stoppered bottle containing the water; and shake well for two or three minutes. After twelve hours the excess of lime will have subsided, and the clear solution may be drawn off with a siphon as it is required for use, or transferred to a green glass bottle furnished with a well-ground stopper.

Test.—Ten fluid ounces require for neutralisation at least 200 grain-measures of the volumetric solution of oxalic acid, which corresponds to 5·6 grains of lime, CaO.

SOLUTION OF OXALATE OF AMMONIA.

Take of Oxalate of Ammonia	½ ounce
Warm Distilled Water	1 pint

Dissolve and filter.

SOLUTION OF PERCHLORIDE OF PLATINUM.

Take of Thin Platinum Foil	¼ ounce
Nitric Acid	a sufficiency
Hydrochloric Acid	a sufficiency
Distilled Water	7 fluid ounces

Mix a fluid ounce of the nitric acid with four fluid ounces of the hydrochloric acid and two fluid ounces of the water; pour the mixture into a small flask containing the platinum, and digest at a gentle heat, adding more of the acids mixed in the same proportion, should this be necessary, until the metal is dissolved. Transfer the solution to a porcelain dish, add to it a fluid drachm of hydrochloric acid, and evaporate on a water-bath, until acid vapours cease to be given off. Let the residue be dissolved in the remaining five ounces of distilled water. Filter and preserve it in a stoppered bottle.

Or use the 1^x attenuation.

SOLUTION OF PHOSPHATE OF SODA.

Take of Phosphate of Soda, in crystals	1 ounce
Distilled Water	10 fluid ounces

Dissolve and filter.

SOLUTION OF RED PRUSSIATE OF POTASH.

Take of Red Prussiate of Potash, in crystals	¼ ounce
Distilled Water	5 fluid ounces

Dissolve and filter.

SOLUTION OF SULPHATE OF INDIGO.

Take of Indigo, dry and in fine powder	5 grains
Sulphuric Acid - - -	10 fluid ounces

the indigo with a fluid drachm of the sulphuric acid in a small test tube, and apply the heat of a water-bath for an hour. Pour the blue liquid into the remainder of the acid, agitate the mixture, and, when the undissolved indigo has subsided, decant the clear liquid into a stoppered bottle.

SOLUTION OF SULPHATE OF IRON.

Take of Granulated Sulphate of Iron	10 grains
Boiling Distilled Water -	1 fluid ounce

Dissolve and filter.

This solution should be recently prepared.

SOLUTION OF SULPHATE OF LIME.

Take of Plaster of Paris - -	$\frac{1}{4}$ ounce
Distilled Water - -	1 pint

Rub the plaster of Paris in a porcelain mortar for a few minutes with two ounces of the water, introduce the mixture thus obtained into a pint bottle containing the rest of the water, shake well several times, and allow the undissolved sulphate to subside. When this has occurred, filter.

SOLUTION OF SULPHIDE OF AMMONIUM.

Take of Solution of Ammonia - -	5 fluid ounces

Put three fluid ounces of the ammonia into a bottle, and conduct into this a stream of sulphuretted hydrogen so long as the gas continues to be absorbed; then add the remainder of the ammonia, and transfer the solution to a green-glass bottle furnished with a well-ground stopper.

SOLUTION OF TARTARIC ACID.

Take of Tartaric Acid in crystals	1 ounce
Distilled Water	8 fluid ounces
Rectified Spirit	2 fluid ounces

Dissolve the tartaric acid in the water, add the rectified spirit, and preserve the solution in a stoppered bottle.

SOLUTION OF YELLOW PRUSSIATE OF POTASH.

Take of Yellow Prussiate of Potash, in crystals	¼ ounce
Distilled Water	5 fluid ounces

Dissolve and filter.

NESSLER'S SOLUTION.

Take of Iodide of Potassium	27 grains
Red Iodide of Mercury	a sufficiency
Solution of Potash	10 fluid drachms
Distilled Water	6 fluid drachms

Dissolve the iodide of potassium in 80 minims of the water, heat the solution and add red iodide of mercury until the last portion remains undissolved. When the mixture has cooled add to it the remainder of the water and let it stand some time. Then filter, mix the filtrate with the solution of potash and preserve it in a stoppered bottle.

Should the fluid become turbid, filter it again.

TEST SOLUTIONS FOR VOLUMETRIC ESTIMATIONS,

Used in the British Pharmacopœia, and also in this Pharmacopœia.

The processes for volumetric estimations may be performed either with British or with metrical weights and measures, and the solutions are so arranged that they will be of the same strength, and the same indications will be obtained in using them, whichever system is employed, without the *necessity* of altering any of the figures by which the quantities of the substances tested or of the test solutions required in the process, are expressed.

According to the British system, the quantities of the substances to be tested are expressed in grains by weight, whilst the quantities of the test solutions employed in testing are expressed in grain-measures,—the grain-measure being the volume of a grain of distilled water.

According to the metrical system the quantities of the substances to be tested are expressed in grammes by weight, whilst the quantities of the test solutions employed in testing are expressed in cubic centimetres,—the cubic centimetre being the volume of a gramme of distilled water.

As the cubic centimetre bears the same relation to the gramme that the grain-measure bears to the grain, the one system may be substituted for the other with no difference in the results, excepting that, by the metrical system, all the quantities will be expressed in relation to a weight (the gramme) which is more than fifteen times as great as the British grain.

In practice it will be found convenient in substituting metrical for British weights and measures, to reduce the values of all the numbers to one tenth, by moving the decimal points, and this has been done in the tables appended to the descriptions of the volumetric solutions. The quantities indicated in the Pharmacopœia, which in grains and grain-measures can be conveniently used, would be found inconveniently large if the same numbers of grammes and cubic centimetres were employed.

The following apparatus is required in the preparation and use of these solutions.

For British weights and measures :—

1. A flask which, when filled to a mark on the neck, contains exactly 10,000 grains of distilled water at 60°. The capacity of the flask is therefore 10,000 grain-measures.

2. A graduated cylindrical jar which, when filled to 0, holds 10,000 grains of distilled water, and is divided into 100 equal parts.

3. A burette. A graduated glass tube which, when filled to 0, holds 1,000 grains of distilled water, and is divided into 100 equal parts. Each part therefore corresponds to 10 grain-measures.

For metrical weights and measures :—

1. A glass flask which, when filled to a mark on the neck, contains one litre or 1,000 cubic centimetres.

2. A graduated cylindrical jar which, when filled to 0, contains one litre (1,000 cubic centimetres), and is divided into 100 equal parts.

3. A burette. A graduated tube which, when filled to 0, holds 100 cubic centimetres, and is divided into 100 equal parts.

(One cubic centimetre is the volume of one gramme of distilled water at 4° C.* 1,000 cubic centimetres equal one litre.)

Volumetric solutions, before being used, should be shaken, in order that they may be throughout of uniform strength. They should also be preserved in stoppered bottles. All measurements should be made at 60°.

VOLUMETRIC SOLUTION OF BICHROMATE OF POTASH.

(Bichromate of Potash, $K_2Cr_2O_7 = 295$.)

Take of Bichromate of Potash -	147·5 grains
Distilled Water - - -	a sufficiency

Put the bichromate of potash into the 10,000 grain flask and, having half filled the flask with water, allow the salt to dissolve; then dilute the solution with more water, until it has the exact bulk of 10,000 grain-measures. 1,000 grain-measures of this solution contain 14·75 grains of the bichromate ($\frac{1}{20}$th of $K_2Cr_2O_7$, in grains) and when added to a solution of a protosalt of iron acidulated with hydrochloric acid, are capable of converting 16·8 grains of iron ($\frac{1}{20}$th of 6Fe, in grains) from the state of protosalt to that of persalt.

Grammes and cubic centimetres may be employed instead of grains and grain-measures, but for convenience $\frac{1}{10}$th of the numbers should be taken. Thus 14·75 grammes of bichromate of potash should be made to form 1,000 cubic centimetres of solution. 100 cubic centimetres of this solution contain 1·475 gramme of the bichromate ($\frac{1}{200}$th of $K_2Cr_2O_7$, in grammes), and when added to a solution of protosalt of iron acidulated with hydrochloric acid are capable of converting 1·68 gramme of iron ($\frac{1}{200}$th of 6Fe, in grammes) from the state of protosalt to that of persalt.

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* It is customary to make the measurements with metrical apparatus at 60° Fahr.

This solution is used for determining the proportion of protoxide of iron in the following preparations. It is known that the whole of the protosalt has been converted into a persalt when a minute drop of the liquid, placed in contact with a drop of the solution of red prussiate of potash on a white plate, ceases to strike with it a blue colour.

	British weights and measures.				Metrical weights and measures.		
	Grains weight of substance.	=	Grain-measures of Vol. Sol.	or	Grams. wt. of Substance.	=	C. C. of Vol. Sol.
Ferr. Arsen.	20	=	170	or	2·0	=	17·0
,, Carb.	20	=	208	or	2·0	=	20·8
,, Magn.	20	=	230	or	2·0	=	23·0
,, Phosph.	20	=	250	or	2·0	=	25·0

VOLUMETRIC SOLUTION OF HYPOSULPHITE OF SODA.

(Hyposulphite of Soda crystallised, $Na_2H_2S_2O_4.4H_2O=248$.)

Take of Hyposulphite of Soda, in crystals - - - } 280 grains
Distilled Water - - a sufficiency

Dissolve the hyposulphite of soda in 10,000 grain-measures of water. Fill a burette with this solution and drop it cautiously into 1,000 grain-measures of the volumetric solution of iodine, until the brown colour is just discharged. Note the number of grain-measures (*n*) required to produce this effect; then put 8,000 grain-measures of the same solution into a graduated jar, and augment this quantity by the addition of distilled water until it amounts to $\frac{8000 \times 1000}{n}$ grain-measures. If for example, $n = 950$ the 8,000 grain-measures of solution should be diluted to the bulk of $\frac{8000 \times 1000}{950} = 8{,}421$ grain-measures. 1,000 grain-measures of this solution contain 24·8 grains of the hyposulphite, ($\frac{1}{10}$th of $Na_2H_2S_2O_4.4H_2O$, in grains), and therefore correspond to 12·7 grains of iodine ($\frac{1}{10}$th of an equivalent).

Grammes and cubic centimetres may be employed instead of grains and grain-measures, but for convenience $\frac{1}{10}$th of the numbers should be taken. 100 cubic centimetres of this solution contain 2·48 grammes of the hyposulphite ($\frac{1}{100}$th of $Na_2H_2S_2O_4.4H_2O$, in grammes), and therefore correspond to 1·27 grain of iodine ($\frac{1}{100}$th of an equivalent).

This solution is used for testing the following substances. In each case, excepting that of iodium, a solution of iodide of potassium and hydrochloric acid are added to the substance, and the amount of iodine so liberated is indicated by this solution.

	British weights and measures.				Metrical weights and measures.		
	Grains weight of Substance.	=	Grain-measures of Vol. Sol.	or	Grams. wt. of Substance.	=	C. C. of Vol. Sol.
Calx Chlorata -	10·0	=	850	or	1·00	=	85·0
Iodium - -	12·7	=	1000	or	1·27	=	100·0
Natr. Chlorat. -	70·0	=	500	or	7·00	=	50·0

VOLUMETRIC SOLUTION OF IODINE.

(Iodine, I=127.)

Take of Iodine - - - -	127 grains
Iodide of Potassium - -	180 grains
Distilled Water - - -	a sufficiency

Put the iodide of potassium and the iodine into the 10,000 grain flask, fill the flask to about two-thirds its bulk with distilled water, gently agitate until solution is complete, and then dilute the solution with more water until it has the exact volume of 10,000 grain-measures. 1,000 grain-measures of this solution contain $\frac{1}{10}$th of an equivalent in grains (12·7 grains) of iodine, and therefore correspond to 1·7 grain of sulphuretted hydrogen, 3·2 grains of sulphurous, and 4·95 grains of arsenious acid.

Grammes and cubic centimetres may be employed instead of grains and grain-measures, but for convenience $\frac{1}{10}$th of the numbers should be taken. 100 cubic centimetres contain 1·27 gramme of iodine and correspond to 0·17 gramme of sulphuretted hydrogen, 0·32 gramme of sulphurous, and 0·495 gramme of arsenious acid.

This solution is used for testing the following substances. It is dropped from the burette into the liquid to be tested until free iodine begins to appear in the solution.

	British weights and measures.				Metrical weights and measures.		
	Grains weight of Substance.	=	Grain-measures of Vol. Sol.	or	Grams. wt. of Substance.	=	C. C. of Vol. Sol.
Acid. Arsenios. -	4·0	=	808	or	0·40	=	80·8
,, Sulphurosum	34·7	=	1000	or	3·47	=	100·0
Liquor Arsenicalis	441·5	=	808	or	44·15	=	80·8

VOLUMETRIC SOLUTION OF NITRATE OF SILVER.

(Nitrate of Silver, $AgNO_3 = 170$.)

Take of Nitrate of Silver - - - 170 grains
Distilled Water - - - a sufficiency

Put the nitrate of silver into the 10,000 grain flask, and, having half filled the flask with water, allow the salt to dissolve; then dilute the solution with more water until it has the exact bulk of 10,000 grain-measures. The solution should be kept in an opaque stoppered bottle. 1,000 grain-measures of this solution contain $\frac{1}{10}$th of an equivalent in grains of nitrate of silver (or 17·0 grains).

Grammes and cubic centimetres may be employed instead of grains and grain-measures, but for convenience $\frac{1}{10}$th of the numbers should be taken. 100 cubic centimetres contain $\frac{1}{100}$th of an equivalent in grammes of nitrate of silver (or 1·7 gramme).

It is used in testing the following substances:—

	British weights and measures.				Metrical weights and measures.		
	Grains weight of Substance.	=	Grain-measures of Vol. Sol.	or	Grams. wt. of Substance.	=	C. C. of Vol. Sol.
Acid. Hydrocyan.	270	=	1000	or	27·0	=	100·0
Kali Brom. -	10	=	840	or	1·0	=	84·0
Natr. Arsen. (dry)	10	=	1613	or	1·0	=	161·3

VOLUMETRIC SOLUTION OF OXALIC ACID.

(Crystallized Oxalic Acid, $H_2C_2O_4.2H_2O=126$.)

Take of Purified Oxalic Acid in crystals, quite dry, but not effloresced } 630 grains
Distilled Water - - - a sufficiency

Put the oxalic acid into the 10,000 grain flask, fill the flask to about two thirds of its bulk with water, allow the acid to dissolve, and then dilute the solution with more water until it has the exact volume of 10,000 grain-measures. 1,000 grain-measures of this solution contain half an equivalent in grains (63 grains) of oxalic acid, and are therefore capable of neutralising one equivalent in grains of an alkali or alkaline carbonate.

Grammes and cubic centimetres may be employed instead of grains and grain-measures, but for convenience $\frac{1}{10}$th of the numbers should be taken. 100 cubic centimetres contain $\frac{1}{20}$th of an equivalent in grammes (6·3 grammes) of oxalic acid, and will neutralise $\frac{1}{10}$th of an equivalent in grammes of an alkali.

The following substances are tested with this solution:—

	British weights and measures.				Metrical weights and measures.		
	Grains weight of Substance.	=	Grain-measures of Vol. Sol.	or	Grams. wt. of Substance.	=	C.C of Vol. Sol.
Ammon. Carb.	59·0	=	1000	or	5·90	=	100·0
Borax	191·0	=	1000	or	19·10	=	100·0
Kali Carb.	83·0	=	980	or	8·30	=	98·0
,, Citr.	102·0	=	1000	or	10·20	=	100·0
,, Tartr.	113·0	=	1000	or	11·30	=	100·0
Liq. Ammon. Fort.	52·3	=	1000	or	5·23	=	100·0
,, Calcis	4380·0	=	200	or	438·00	=	20·0
,, ,, Sacchar.	460·2	=	254	or	46·02	=	25·4
,, Potassæ	462·9	=	482	or	46·29	=	48·2
,, Sodæ	458·0	=	470	or	45·80	=	47·0
Natr. Carb.	143·0	=	960	or	14·30	=	96·0
Plumb. Acet.	38·0	=	200	or	3·80	=	20·0
Potassæ Bicarb. P.B.	50·0	=	500	or	5·00	=	50·0
,, Tart.Acida,P.B. (Cream of Tartar)	188·0	=	1000	or	18·80	=	100·0
Sodæ Bicarb. P.B.	84·0		1000	or	8·40	=	100·0

VOLUMETRIC SOLUTION OF SODA.

(Hydrate of Soda, NaHO=40.)

Take of Solution of Soda - - - a sufficiency
Distilled Water - - - a sufficiency

Fill a burette with the solution of soda, and cautiously drop this into 63 grains of purified oxalic acid dissolved in about two ounces of water, until the acid is exactly neutralised as indicated by litmus. Note the number of grain-measures (n) of the solution used, and having then introduced 9,000 grain-measures of the solution of soda into a graduated jar, augment this quantity by the addition of water, until it becomes $\frac{9000 \times 1000}{n}$ grain-measures. If for example, $n = 930$, the 9,000 grain-measures should be augmented to $\frac{9000 \times 1000}{930} = 9{,}677$ grain-measures. 1,000 grain-measures of this solution contain one equivalent in grains (40 grains) of hydrate of soda, and will therefore neutralise one equivalent in grains of any monobasic acid.

Grammes and cubic centimetres may be employed instead of grains and grain-measures, but for convenience $\frac{1}{10}$th of the numbers should be taken. 100 cubic centimetres contain $\frac{1}{10}$th of an equivalent in grammes (4 grammes) of hydrate of soda, and will neutralise $\frac{1}{10}$th of an equivalent in grammes of an acid.

This solution is used for testing the following substances:—

	British weights and measures.				Metrical weights and measures.		
	Grains weight of Substance.	=	Grain-measures of Vol. Sol.	or	Grams. wt. of Substance.	=	C. C. of Vol. Sol.
Acid. Acet. Glac. -	60·0	=	990	or	6·00	=	99·0
,, Citric. -	70·0	=	1000	or	7·00	=	100·0
,, Hydrochl. -	114·8	=	1000	or	11·48	=	100·0
,, Nitric. -	90·0	=	1000	or	9·00	=	100·0
,, Sulph. -	50·6	=	1000	or	5·06	=	100·0
,, Tart. -	75·0	=	1000	or	7·50	=	100·0

Symbols and Equivalent Weights of the Elementary Bodies mentioned in this Pharmacopœia.

ELEMENTARY BODIES.	SYMBOLS AND EQUIVALENTS.
Aluminium	Al = 27·5
Antimony (Stibium)	Sb = 122
Arsenic	As = 75
Barium	Ba = 137
Bismuth	Bi = 210
Boron	B = 11
Bromine	Br = 80
Cadmium	Cd = 112
Calcium	Ca = 40
Carbon	C = 12
Cerium	Ce = 141·3
Chlorine	Cl = 35·5
Chromium	Cr = 52·5
Cobalt	Co = 59
Copper (Cuprum)	Cu = 63·4
Fluorine	F = 19
Gold (Aurum)	Au = 196·6
Hydrogen	H = 1
Iodine	I = 127
Iridium	Ir = 198
Iron (Ferrum)	Fe = 56
Lead (Plumbum)	Pb = 207
Lithium	L = 7
Magnesium	Mg = 24
Manganese	Mn = 55
Mercury (Hydrargyrum)	Hg = 200
Nickel	Ni = 59
Nitrogen	N = 14
Osmium	Os = 199
Oxygen	O = 16
Palladium	Pd = 106·5
Phosphorus	P = 31
Platinum	Pt = 197.1
Potassium (Kalium)	K = 39
Selenium	Se = 79·1

ELEMENTARY BODIES.	SYMBOLS AND EQUIVALENTS.
Silicon	Si = 28
Silver (Argentum)	Ag = 108
Sodium (Natrium)	Na = 23
Strontium	Sr = 87·6
Sulphur	S = 32
Tellurium	Te = 129
Tin (Stannum)	Sn = 118
Titanium	Ti = 50
Uranium	U = 240
Zinc	Zn = 65

WEIGHTS AND MEASURES OF THE BRITISH PHARMACOPŒIA,

Used in this Pharmacopœia.

WEIGHTS.

1 Grain	gr.			
1 Ounce	oz.		=	437·5 grains*
1 Pound	lb.	= 16 ounces	=	7000 „

MEASURES OF CAPACITY.

1 Minim	min.	♏		
1 Fluid Drachm	fl. drm.	*f* ʒ	=	60 minims
1 Fluid Ounce	fl. oz.	*f* ℥	=	8 fluid drachms
1 Pint	O.		=	20 fluid ounces
1 Gallon	C.		=	8 pints

[*] Although avoirdupois weights have been adopted in *preparing* the medicines ordered in this Pharmacopœia, it will, nevertheless, be optional with medical practitioners in *prescribing* to use the symbols ℈ and ʒ, the former representing 20 and the latter 60 grains, if such should be found conducive to accuracy or convenience.

MEASURES OF LENGTH.

1 line = $\frac{1}{12}$ inch
1 inch = $\frac{1}{39\cdot1393}$ seconds pendulum
12 ,, = 1 foot
36 ,, = 3 ,, = 1 yard

Length of pendulum vibrating seconds of mean time in the latitude of London, in a vacuum at the level of the sea - } 39·1393 inches

RELATION OF MEASURES TO WEIGHTS.

1 Minim is the measure of			0·91	grains of water
1 Fluid Drachm	,,		54·68	,,
1 Fluid Ounce	,,	1 ounce or	437·5	,,
1 Pint	,,	1·25 pounds or	8750·0	,,
1 Gallon	,,	10 pounds or	70,000·0	,,

WEIGHTS AND MEASURES OF THE METRICAL SYSTEM.

WEIGHTS.

1 Milligramme	=the thousandth part of one gramme, or		0·001	gramme.
1 Centigramme	=the hundredth	,,	0·01	,,
1 Decigramme	=the tenth	,,	0·1	,,
1 Gramme	=weight of a cubic centimetre of water at 4° C.		1·0	,,
1 Decagramme	=ten grammes		10·0	,,
1 Hectogramme	=one hundred grms.		100·0	,,
1 Kilogramme	=one thousand grms.		1000·0	,,

MEASURES OF CAPACITY.

1 Millilitre = 1 cub. centim. or the mea. of 1 grm. of water.
1 Centilitre = 10 „ 10 „ „
1 Decilitre = 100 „ 100 „ „
1 Litre = 1000 „ 1000 „ (1 kilo.)

MEASURES OF LENGTH.

1 Millimetre = the thousandth part of one metre or 0·001 metre
1 Centimetre = the hundredth „ 0·01 „
1 Decimetre = the tenth „ 0·1 „
1 Metre = the ten-millionth part of a quarter of the meridian of the earth.

RELATION OF THE WEIGHTS OF THE BRITISH PHARMACOPŒIA TO THE METRICAL WEIGHTS.

1 Pound = 453·5925 grammes
1 Ounce = 28·3495 „
1 Grain = 0·0648 „

RELATION OF MEASURES OF CAPACITY OF THE BRITISH PHARMACOPŒIA TO THE METRICAL MEASURES.

1 Gallon = 4·543487 litres
1 Pint = 0·567936 „ or 567·936 cubic centimtrs.
1 Fluid Ounce = 0·028396 „ 28·396 „
1 Fluid Drachm = 0·003549 „ 3·549 „
1 Minim = 0·000059 „ 0·059 „

RELATION OF THE METRICAL WEIGHTS TO THE WEIGHTS OF THE BRITISH PHARMACOPŒIA.

1 Milligramme = 0·015432 grs.
1 Centigramme = 0·15432 „
1 Decigramme = 1·5432 „
1 Gramme = 15·432 „
1 Kilogramme = 2 lbs. 3 oz. 119·8 grs. or 15432·348 „

RELATION OF THE METRICAL MEASURES TO THE MEASURES OF THE BRITISH PHARMACOPŒIA.

1 Millimetre = 0·03937 inches
1 Centimetre = 0·39371 „
1 Decimetre = 3·93708 „
1 Metre = 39·37079 „ or 1 yard 3·37 inches.
1 Cubic centimetre = 15·432 grain-measures.
1 Litre = 1 pint 15 oz. 2 drs. 11 m. or 15432·348 grain-measures.

PART II.

DESCRIPTION OF THE MEDICINES AND THEIR PREPARATIONS.

ACIDUM BENZOICUM.

Contractions.—Benz.-ac. Bz.-x.

Present name.—Benzoic Acid. $C_6H_5.CO_2H$.

Flowers of Benzoin.

Obtained from benzoin, a balsamic resin, which exudes from the incised bark of the *Styrax Benzoin*, D.C. *Nat. ord.*, STYRACACEÆ. It is prepared by sublimation, and can be purchased in a state of purity in crystals.

Characters and Tests.—Light feathery crystalline plates and needles, flexible, nearly colourless, and having an agreeable aromatic odour resembling that of benzoin. Sparingly soluble in cold water, but readily dissolved by rectified spirit. Soluble also in solutions of the caustic alkalies and of lime, and precipitated from them by Hydrochloric Acid. It melts at 248°, forming a colourless liquid, and boils at 462°. When heated to the last-named temperature it sublimes without residue.

Preparations.—Trituration. Solution in rectified spirit.

Proper forms for dispensing.—1^x *to* 3, *Trituration; or* 1^x *and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

ACIDUM CARBOLICUM.

Contractions.—Carb.-ac. Cb.-x.

Present name.—Phenol. $C_6H_5.OH$.

Carbolic Acid. Phenic Acid. Phenyl hydrate. German, *Carbolsäure ;* French, *Acide phénique.*

An acid obtained from coal-tar oil by fractional distillation and purification.

Characters and Tests.—In colourless acicular crystals, which at a temperature of 95° become an oily liquid, having a strong odour and taste, resembling those of creasote, which it also resembles in many of its characters and properties. Its specific gravity is 1·065 ; boiling point, 370°. The crystals readily absorb moisture on exposure to the air, and they are thus liquefied; the acid, however, is but slightly soluble in water, but it is freely soluble in alcohol, ether, and glycerine. It does not redden blue litmus paper. A slip of deal dipped into it, and afterwards into Hydrochloric Acid, and then allowed to dry in the air, acquires a greenish-blue colour. It coagulates Albumen. It does not affect the plane of polarization of a ray of polarized light.

Preparations.—It is most frequently used externally as a lotion, made by solution in water in proportions varying from 1 in 30 to 1 in 400.

Solution in rectified spirit for 1^x and upwards.

Proper forms for dispensing.—1^x *and upwards, Tincture, Pilules or Globules.*

ACIDUM FLUORICUM.

Contractions.—Fluor.-ac. Fl.-x.

Present name.—Hydrofluoric Acid. HF. German, *Fluorwasserstoffsäure ;* French, *Acide fluorique.*

Prepared by distilling 1 part of pure fluorspar (Calcic

Fluoride) in a state of fine powder with 2 or 3 parts of Sulphuric Acid in a retort of platinum or lead, connected with a receiver of the same metal, carefully cooled by immersion in a mixture of ice and salt, and containing sufficient distilled water to yield a solution having a specific gravity of about 1·15.

It must be purified by redistillation at a gentle heat and preserved in gutta-percha bottles.

N.B. The preparation of this acid must be conducted with the greatest care, and special provision must be made for carrying off the fumes from the operator. The concentrated acid is highly dangerous from its caustic action on the skin, the smallest drop occasioning a deep and painful burn.

Tests.—Place a drop of the aqueous solution on a slip of glass, let it remain a few minutes, then wash it off, and hold the glass so that the eye may glance over the polished surface, when the spot where the liquid was will be found to have entirely lost its polish, some of the glass having been dissolved.

Preparation.—As this solution contains about 36 per cent. by weight of the pure acid, 22 minims, or an equivalent number of small drops, cautiously dropped into a fluid drachm of distilled water previously placed in a gutta-percha bottle, will make the 1^x attenuation. Water must be used for making the first three attenuations, and all these must be kept in gutta-percha bottles. Dilute alcohol is used for 4 and rectified spirit for all above.

Proper forms for dispensing.—1^x *to* 3, *watery Solution only.* 4, *dilute Tincture.* 5 *and upwards, Tincture, Pilules, or Globules.*

ACIDUM HYDROCYANICUM.

Contractions.—Hydrocy.-ac. Hy.-x.

Present name.—Hydrocyanic Acid. HCN.

Prussic Acid. German, *Blausäure;* French, *Acide cyanhydrique;* Spanish, *Acido hydrocyánico;* Italian, *Acido idrocyanico.*

Obtained by distilling yellow Prussiate of Potash with Sulphuric Acid and water, as follows:—

Take of	Yellow Prussiate of Potash	$2\frac{1}{4}$ ounces;
	Sulphuric Acid - -	1 fluid ounce;
	Distilled Water - -	30 fluid ounces or a sufficiency.

Dissolve the prussiate of potash in 10 ounces of the water, then add the sulphuric acid, previously diluted with 4 ounces of the water and cooled. Put the solution into a flask or other suitable apparatus of glass or earthenware, to which are attached a condenser and a receiver arranged for distillation; and having put 8 ounces of distilled water into the receiver, and provided efficient means for keeping the condenser and receiver cool, apply heat to the flask, until by slow distillation the liquid in the receiver is increased to 17 fluid ounces. Add to this 3 ounces of distilled water, or as much as may be sufficient to bring the acid to the required strength, so that 100 grains (or 110 minims) of it, precipitated with a solution of nitrate of silver, shall yield 10 grains of dry cyanide of silver.

Characters and Tests.—A colourless liquid, with a strong peculiar odour. Sp. gr. 0·997. It gives no precipitate with Chloride of Barium, but with Nitrate of Silver it gives a white precipitate entirely soluble in boiling concentrated Nitric Acid. Treated with a minute quantity of Sulphate and Persulphate of Iron, afterwards with Potash, and finally acidulated with Hydrochloric Acid, it forms Prussian Blue. 270 grains of it rendered alkaline by the addition of solution of Soda, require 1,000 grain measures of the volumetric solution of Nitrate of Silver to be added before a permanent precipitate begins to form, which corresponds to 2 per cent. of the real acid.

Preparation.—One measure of the dilute acid thus obtained diluted to two measures with rectified spirit will make the first centesimal attenuation. Rectified spirit is used for 3^x and upwards.

N.B.—Hydrocyanic acid and its attenuations should be freshly made, as it deteriorates when kept.

Proper forms for dispensing.—*Below* 3^x, *Tincture only.* 3^x *and upwards, Tincture, Pilules, or Globules.*

ACIDUM MURIATICUM.

Contractions.—Mur.-ac. Mu.-x.

Synonym.—Acidum Hydrochloricum.

Present name.—Hydrochloric Acid. HCl. German, *Salzsäure;* French, *Acide muriatique;* Italian, *Acido idroclorico.*

The process for preparing this should be as follows:—

Take of Chloride of Sodium, dried -	48 ounces;
Sulphuric Acid - - -	44 fluid ounces;
Water - - - -	36 fluid ounces;
Distilled Water - - -	50 fluid ounces.

Pour the sulphuric acid slowly into 32 ounces of the water, and when the mixture has cooled add to it the chloride of sodium previously introduced into a flask having the capacity of at least one gallon. Connect the flask by corks and a bent glass tube with a three-necked wash-bottle, furnished with a safety tube, and containing the remaining 4 ounces of the water; then, applying heat to the flask, conduct the disengaged gas through the wash-bottle into a second bottle containing the distilled water, by means of a bent tube dipping about half an inch below the surface, and let the process be continued until the product measures 66 ounces, or the liquid has acquired a specific gravity of 1·16. The bottle containing the distilled water must be kept cool during the whole operation.

Characters and Tests.—Colourless, strongly acid, emitting white vapours having a very pungent odour. Evaporated to dryness, it leaves no residue; it gives a curdy white precipitate with Nitrate of Silver, soluble in excess of Ammonia, insoluble in Nitric Acid. 114·8 grains by weight, mixed with half an ounce of distilled water, require for neutralization 1,000 grain measures of the volumetric solution of Soda. When diluted with four times its volume of distilled water it gives no precipitate with Chloride of Barium or Sulphuretted Hydrogen; no red colour with Sulphocyanide of Potassium, and does not tarnish bright copper foil when boiled in it. If half a fluid drachm of the acid mixed with 2 fluid drachms of distilled water be put into a test-tube with a few pieces of granulated zinc, and while the effervescence continues, a slip of bibulous paper moistened with a solution of Acetate of Lead be suspended in the upper part of the tube for a few minutes, the paper will not become discoloured.

Preparation.—As this solution contains about 32 per cent. by weight of the pure acid, 1½ fluid drachm diluted to 5 fluid drachms with distilled water will make the 1^x attenuation. Distilled water only should be used for 1, distilled water to which 5 per cent. of rectified spirit has been added up to 3, then dilute alcohol for 4, and after that rectified spirit.

Proper forms for dispensing.—1^x *to* 3, *watery Solution only.* 4, *dilute Tincture.* 5 *and upwards, Tincture, Pilules, or Globules.*

ACIDUM NITRICUM.

Contractions.—Nitr.-ac. Ni.-x.

Present name.—Nitric Acid. HNO_3.

Nitric Acid. German, *Salpetersäure;* French, *Acide nitrique;* Italian, *Acido nitrico.*

Prepared from Nitrate of Potash or Nitrate of Soda by distillation with Sulphuric Acid and water, and containing 70 per cent. by weight of the pure acid. It must answer the following

Characters and Tests.—A colourless liquid, sp. gr. 1·42, emitting powerfully acrid fumes. Evaporated to dryness, it leaves no residue; poured over copper filings, dense red vapours are immediately formed; but if the acid be mixed with an equal volume of water and then added to the copper, it gives off a colourless gas, which becomes orange-red when mixed with air. Diluted with six times its volume of distilled water, it gives no precipitate with Chloride of Barium or Nitrate of Silver; 90 grains by weight mixed with half an ounce of distilled water require 1,000 grain measures of the volumetric solution of Soda for neutralization.

Preparation.—1 fluid drachm diluted with distilled water until it measures 9 fluid drachms will make the 1^x attenuation. Distilled water must be used for 1, distilled water to which 5 per cent. of rectified spirit has been added up to 3, and dilute alcohol for 4, after which rectified spirit may be employed.

Proper forms for dispensing.—1^x to 3, *watery Solution only.* 4, *dilute Tincture.* 5 *and upwards, Tincture, Pilules, or Globules.*

ACIDUM OXALICUM.

Contractions.—Oxal.-ac. Ox.-x.

Present name.—Oxalic Acid. $H_2C_2O_4.2H_2O$.

Oxalic Acid. German, *Oxalsäure;* French, *Acide oxalique.*

Prepared on a large scale by the action of caustic alkalies on sawdust. It should be purified by solution in distilled water and re-crystallization, according to the following process, viz. :—

Take of Oxalic Acid of commerce	-	1 pound ;
Boiling Distilled Water	-	30 fluid ounces.

Dissolve, filter the solution, and set it aside to crystallize. Pour off the liquor, and dry the crystals by exposure to the air on filtering-paper placed on porous bricks.

Characters and Tests.—Colourless prismatic crystals, strongly acid, dissolving freely in water and in rectified spirit. Heated in a test-tube with strong Sulphuric Acid, it dissolves with effervescence, evolving Carbonic Oxide and Carbonic Anhydride, the former of which burns with a blue flame when ignited at the mouth of the tube. Heated in a dry tube, it melts readily, and at a temperature below 350° is entirely converted into vapour, a part of which condenses on the sides of the tube in fine transparent needles. Its solution in water gives a white precipitate with Nitrate of Silver, soluble in dilute Nitric Acid. A strong solution gives with Chloride of Barium, on stirring with a glass rod, a granular precipitate, soluble in dilute Nitric Acid.

Preparation.—Solution in rectified spirit 1 in 10.

Proper forms for dispensing.—1^x *and upwards, Tincture, Pilules, or Globules.*

ACIDUM PHOSPHORICUM.

Contractions.—Phos.-ac. Ph.-x.

Present name.—Ortho-phosphoric Acid. H_3PO_4.

Phosphoric Acid. German, *Phosphorsäure ;* French, *Acide phosphorique ;* Italian, *Acido fosforico ;* Spanish, *Acido fosfórico.*

Hahnemann directs this to be prepared by the action of Sulphuric Acid on calcined bones. It can be better prepared by burning Phosphorus in oxygen and diluting the product to sp. gr. 1·058.

Characters and Tests.—A colourless liquid, having a sour taste and strongly acid re-action. Specific gravity 1·058. Diluted with much water, it gives a canary-yellow precipitate with Ammonio-Nitrate of Silver, which is soluble in Ammonia and in diluted Nitric Acid. Evaporated, it leaves a residue which melts at a low red heat, and upon cooling exhibits a glassy appearance. It is not precipitated by Sulphuretted Hydrogen, Chloride of Barium, Nitrate of Silver with excess of Nitric Acid, or solution of Albumen. When mixed with an equal volume of pure Sulphuric Acid and introduced into a solution of Sulphate of Iron, it does not communicate a dark colour. Mixed with an equal volume of solution of Perchloride of Mercury and heated, no precipitate is formed.

Preparation.—The solution recommended above forms our 1^x preparation.

The 1 attenuation should be made with distilled water, 3^x and 2 with distilled water to which 5 per cent. of rectified spirit has been added, 5^x with dilute alcohol, and 3 and upwards with rectified spirit.

Proper forms for dispensing.—1^x *to* 2, *watery Solution only.* 5^x, *dilute Tincture.* 3 *and upwards, Tincture, Pilules, or Globules.*

ACIDUM PICRICUM.

Contractions.—Pic.-ac. Pi.-x.

Present name.—Picric Acid. $C_6H_2(NO_2)_3.OH$.

Picric Acid, Carbazotic Acid, Tri-nitro-phenic Acid.

Prepared by the action of Nitric Acid on Carbolic Acid, indigo, salicine, silk, and other substances. It may also be obtained from coal tar, creasote, or from Australian gum. It should be re-crystallized.

Characters and Tests.—Pale yellow shining prisms or scales, sparingly soluble in water, readily soluble in alcohol and in ether; it imparts a yellow colour to the solution, and a very bitter taste, and stains the skin deep yellow. When cautiously heated in a test tube it melts at about 253° to a yellow oily liquid, and sublimes as the temperature is gradually increased. One grain imparts a distinct yellow tint to at least 250,000 minims of distilled water. Concentrated Sulphuric and Nitric Acids dissolve it unaltered and deposit it on dilution with water. It forms yellow salts which explode violently when heated, some of them also by percussion.

Preparations.—Trituration. Solution in rectified spirit, 1 in 20.

Proper forms for dispensing.—1^x *to* 3, *Trituration; or,* 1 *in* 20 *and upwards, Tincture, Tincture-trituration, Pilules or Globules.*

ACIDUM SULPHURICUM.

Contractions.—Sulph.-ac. Su.-x.

Present name.—Sulphuric Acid. H_2SO_4.

Sulphuric Acid. German, *Schwefelsäure;* French, *Acide sulfurique;* Italian, *Acido solforico;* Spanish, *Acido sulfurico.*

Hahnemann recommends the Nordhaüsen or fuming Sulphuric Acid to be used, directing it to be re-distilled in glass vessels. A very pure acid, however, can be obtained by the combustion of sulphur and the oxidation of the resulting sulphurous anhydride by means of nitrous vapours. It must answer to the following

Characters and Tests.—A colourless oily liquid, sp. gr. 1·843, evolving much heat on the addition of water, and giving when diluted a copious white precipitate with Chloride of Barium, insoluble in Nitric Acid. Evaporated in a platinum crucible, it leaves no residue. Diluted with six times its volume of distilled water, no white precipitate appears. Neither does it give any precipitate with Sulphuretted Hydrogen. When a solution of Sulphate of Iron is poured gently on its surface, no purple colour is developed where the two liquids unite.

Preparation.—This liquid contains 96·8 per cent. by weight of the pure acid. Hence 30 minims mixed gradually with sufficient distilled water to measure when cold 1 fluid ounce will constitute our 1^x preparation. The 1 attenuation should be made with distilled water, 3^x to 3 with distilled water to which 5 per cent. of rectified spirit has been added, 4 with dilute alcohol, and 5 and upwards with rectified spirit.

Proper forms for dispensing.—1^x *to* 3, *watery Solution only.* 4, *dilute Tincture.* 5 *and upwards, Tincture, Pilules, or Globules.*

ACONITUM.

Contractions.—Acon. Aco.

Aconitum Napellus, *Linn.* *Nat. ord.*, RANUNCULACEÆ.

Fig.—Flora Hom., pl. 1.

Common Aconite, Monkshood, or Wolfsbane. German, *Eisenkappe, Sturmhut;* French, *Aconit Napel;* Italian, *Napello;* Spanish, *Napello.*

Habitat.—Moist pastures, thickets and waste places, &c., in mountainous districts, in Central and Southern Europe, and Russian and Central Asia, extending northwards into Scandinavia. In Britain probably introduced, but apparently wild in some shady places in Western England and South Wales.

Flowering time.—June to August.

Parts employed.—(1) The leaves and flowering tops, and (2) the root.

Characters.—*Leaves* smooth, palmate, divided into five or seven deeply cut wedge-shaped segments, exciting slowly when chewed a sensation of tingling. *Flowers* numerous, irregular, deep blue, in dense racemes. The upper helmet-shaped sepal at first conceals the lateral ones, but is ultimately thrown back. *Carpels* 3, often slightly united at the base. The fresh *root* is usually from 1 to 3 inches long, tapering, dark brown, internally whitish. A minute portion cautiously chewed causes prolonged tingling and numbness. The juice must not be swallowed, and the mouth should be washed after applying this test.

Time for collecting.—The leaves and flowering tops, when about one-third of the flowers have expanded. The root in spring, before the leaves have appeared, or in early autumn, before the old root dies.

N.B.—The cultivated plant has been repeatedly used in place of the wild one, and it yields a very good tincture. It is needful, however, to select plants which have not been grown in rich, luxuriant soil, and also such as retain all the characters of the wild plant unaltered by cultivation.

Preparations.—1. Tincture from freshly collected leaves and flowering tops. 2. Tincture from the fresh or dry root, the alcoholic strength being proof spirit in either case. Process I.

The first mentioned tincture should be dispensed when the tincture from the root is not expressly ordered.

Proper forms for dispensing.—ϕ *and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

Average loss of moisture: Tops, 72 per cent.; Root, 69 per cent.

ACTÆA RACEMOSA.

Contractions.—Act.-r. Ac.-r.

Actæa racemosa, *Linn.* Cimicifuga racemosa, *Torr.* *Nat. ord.*, RANUNCULACEÆ.

Synonyms.—C. serpentaria, Actæa monogynia, Macrotys racemosa, M. octreoides, Botrophis serpentaria.

Fig.—Gray's Genera of American Plants, pl. 20.

Black Snake Root. German, *Schwartzwurz;* French, *L'Actée;* Italian, *Actea;* Spanish, *Actea.*

Habitat.—Canada, Georgia, and Western States.

Flowering time.—July.

Part employed.—The root.

Characters.—The plant is monogynous; carpels subglobose; seeds compressed. *Root* thick and knotted, with long fibres. *Stem* 3 to 8 feet high, glabrous, furrowed, leafy near the middle. *Leaves* 3 ternate; racemes branching, 6 to 12 inches long. *Flowers* very fœtid; sepals caducous, greenish-white, concave.

Characters of the dried root.—A thick, irregularly bent, or contorted body or caudex, dark brown externally, yellowish-white within; from one-third of an inch to an inch in diameter, often several inches in length, with long fibres, rendered extremely rough and jagged in its appearance by the remains of the stems of successive years; taste bitter, somewhat astringent, afterwards acrid.

Time for collecting.—Spring, before the leaves appear, or autumn.

Preparations.—1. Tincture of the fresh root, prepared in, and imported from, North America. 2. Tincture of the dry root, using proof spirit. Process I.

Proper forms for dispensing.—*φ and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

ÆSCULUS HIPPOCASTANUM.

Contractions.—Æscul.-h. Æs.-h.

Æsculus Hippocastanum, *Linn.* *Nat. ord.*, Sapindaceæ.

Synonym.—Hippocastanum vulgare.

Fig.—Woodv. Med. Bot., t. 128.

Horse Chestnut. German, *Gemeine Kastanie, Rosskastanie*; French, *Marronnier d'Inde.*

Habitat.—Unknown, probably native of both Northern India and North America. Abundant, as an introduced tree, in Britain and France.

Flowering time.—May.

Part employed.—The ripe kernel.

Characters. — Nuts ovoid, mahogany-coloured, perfectly smooth and shining, with a large oval hilum, which is paler coloured and rough. Kernel white, and very astringent to the taste (very similar in general appearance to Spanish chestnuts, but generally brighter coloured.)

Time for collecting.—September and October.

Preparations.—Tincture of the fresh kernel, corresponding in alcoholic strength with proof spirit. Process I. Trituration of the dry kernel.

Proper forms for dispensing.—*ϕ and upwards, Tincture, Tincture-trituration, Pilules, or Globules; or* 1^x *to* 3, *Trituration.*

Average loss of moisture: 45 per cent.

ÆTHUSA.

Contractions.—Æthus. Æth.

Æthusa Cynapium, *Linn.* *Nat. ord.*, Umbelliferæ.

Fig.—Flor. Hom., pl. 2.

Common Æthusa, Fool's Parsley, Garden Hemlock. German, *Gartenschierling;* French, *Ciguë des Jardins, Petite Ciguë;* Italian, *Cicuta minore;* Spanish, *Cicuta menore.*

Habitat. — A common weed, abundant throughout Europe.

Flowering time.—Summer and autumn.

Parts employed.—The whole fresh plant.

Characters. — *Leaves* dissected, bright green, emitting a nauseous smell when rubbed. *Umbels* on long peduncles, with partial involucres of 2 or 3 long linear bracts, turned downwards towards the outside of the umbels.

Time for collecting.—When in flower.

Preparation. — Tincture, corresponding in alcoholic strength with proof spirit. Process I.

Proper forms for dispensing.—*ϕ and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

Average loss of moisture, 65 per cent.

AGARICUS.

Contractions.—Agar. Aga.

Agaricus muscarius, *Linn.* *Nat. ord.*, Fungi.

Synonyms.—Amanita muscaria, Agaricus imperialis.

Fig.—Flora Hom., pl. 3.

Fly Agaric, Bug Agaric. German, *Fliegenschwamm, Fliegenpilz;* French, *Orange Fausse;* Italian, *Amanita.*

Habitat.—Europe, Asia, and America. In dry places, especially dry pine woods. Not common in England, but abundant in some parts of Scotland.

Parts employed.—The entire fresh fungus after it has been carefully washed and the outer skin removed.

Characters.—*Pileus* 3 to 7 inches broad, convex, and sometimes depressed, of a rich orange scarlet, but occasionally whitish, yellowish, or brown; margin striate. *Gills* white. *Stem* 4 to 9 inches high, half to 1 inch thick; sub-solid, bulbose.

Time for collecting.—Autumn.

Preparations. — Tincture, corresponding in alcoholic strength with dilute alcohol. Process II.

Proper forms for dispensing.—*ϕ and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

Average loss of moisture: 93 per cent.

AGNUS CASTUS.

Contractions.—Agn.-cast. Agn.

Vitex Agnus castus, *Linn.* *Nat. ord.*, VERBENACEÆ.

Synonym.—V. verticillata.

Fig.—Woodville's Med. Bot., vol. ii., pl. 137.

The Chaste Tree.—German, *Keusch-lamm, Mönchspfeffer;* French, *Gattilier commun.*

Habitat.—The shores of the Mediterranean, Provence, and Greece; on sandy spots and at the foot of rocks.

Flowering time.—July to September.

Parts employed.—The ripe berries, fresh or recently dried.

Characters.—A bush from 3 to 5 feet high, much branched. *Leaves* opposite, petiolate, digitate, 5—7 partite; colour dark green on upper, greyish on under surface, with a very strong smell. *Flowers* numerous, blue or purple, in long terminal spikes. *Berries* somewhat like peppercorns, dark purple, half covered by their sage green calyces, yellowish within, hard, having an aromatic odour, and a warm aromatic peculiar taste.

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Time for collecting.—When the berries are ripe.

Preparation. — Tincture, corresponding in alcoholic strength with 20 O.P. spirit. Process I.

Proper forms for dispensing.—*ϕ and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

AILANTUS.

Contractions.—Ailant. Ail.

Ailantus glandulosa, *Desf.* *Nat. ord.*, SIMARUBACEÆ.

The Tree of Heaven. German, *Götterbaum ;* French, *Ailante.*

Habitat.—Eastern Asia. Cultivated as a shade tree in North America.

Parts employed.—The fresh well-developed flowers, and the fresh bark of the young shoots and roots.

Characters.—A deciduous tree of the first rank, growing to the height of 60 feet and upwards. Its straight, erect, column-like *trunk,* from 2 to 3 feet in diameter, its gigantic boughs and shoots clothed with large pendulous leaves, give it a noble appearance. *Leaves* from 1½ to 6 feet in length, pinnate, with an odd one, and having leaflets with coarse glandulous teeth near the base. *Flowers* in rather large compact panicles, of a whitish-green colour, exhaling a disagreeable odour.

Time for collecting.—The flowers when well-developed. The bark in the spring.

Preparations.—1. Tincture of the fresh flowers. 2. Tincture of the fresh bark of the young shoots and roots in equal parts, in either case prepared in, and imported from, North America.

Proper forms for dispensing.—ϕ *and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

ALLIUM CEPA.

Contractions.—Cepa. A.-cp.

Synonym.—Cepa.

Allium Cepa, *Linn.* *Nat. ord.*, LILIACEÆ.

The Common Onion. German, *Zwiebel;* French, *Oignon;* Italian, *Cipolla;* Spanish, *Cebolla.*

Part employed.—The mature bulb.

Characters.– Dr. Hering, who proved this, says nothing about the variety of the cultivated Onion which he used, but recommends "the red, long-shaped, and strongest flavoured to be selected, and, if possible, not raised from ground which has been cultivated for centuries."

Time for collecting.—Autumn.

Preparation. — Tincture, 1 in 20, corresponding in alcoholic strength with proof spirit. Process II.

Proper forms for dispensing.—ϕ *and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

Average loss of moisture, 85 per cent.

ALLIUM SATIVUM.

Contractions.—Allium-s. A.-sa.

Allium sativum, *Linn.* *Nat. ord.*, LILIACEÆ.

Garlic. German, *Knoblauch;* French, *Ail;* Italian, *Aglio;* Spanish, *Ajo.*

This well-known culinary plant is cultivated everywhere.

Part employed.—The mature bulb.

Characters.—The bulb consists of several ovate-oblong, pointed, somewhat curved little bulbs, not unlike claws, which are enclosed in one common dry membrane, forming a large oval bulb.

Time for collecting.—Early autumn.

Preparation.—Tincture, 1 in 20, corresponding in alcoholic strength with proof spirit. Process II.

Proper forms for dispensing.—*ϕ and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

Average loss of moisture, 63 per cent.

ALOE.

Contractions.—Aloe. Alo.

Aloe Socotrina. *Nat. ord.*, LILIACEÆ.

Fig.—Steph. and Chr., iii. 110.

Common Aloes. German, *Aloe;* French, *Aloès;* Italian, *Aloë;* Spanish, *Aloe.*

The inspissated juice of the leaves of one or more undetermined species of Aloe, *Linn.*, produced chiefly in the Island of Socotra.

Characters.—In reddish-brown masses, opaque, or translucent at the edges; breaks with an irregular or smooth and resinous fracture; has a bitter taste, and a strong but fragrant odour; dissolves entirely in proof spirit, and during the solution exhibits, under the microscope, numerous minute crystals.

Preparation.—Solution in proof spirit, 1 in 10, which constitutes the mother tincture.

Proper forms for dispensing.—*ϕ and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

ALUMEN.

Contractions.—Alumen. Aln.

Present name.—Potassic-Aluminic Sulphate. $K_2Al_2 4SO_4.24H_2O$.

Potash Alum. German, *Alaun;* French, *Alun;* Italian, *Allume;* Spanish, *Alumbre.*

Of late years the ammonia alum has largely taken the place of potash alum in commerce; but as the provings were made with the potash salt, we must continue to use it.

It must be purified by re-crystallization.

Characters and Tests.—Colourless, transparent, crystalline masses, exhibiting the faces of the regular octohedron, and having an acid, sweetish, astringent taste. Its watery solution gives with Caustic Potash a white gelatinous precipitate, which is soluble in an excess of the re-agent, an immediate precipitate with Chloride of Barium, and after some hours a crystalline precipitate with Tartaric Acid. It is not coloured blue by the addition of either yellow or red Prussiate of Potash. Boiled with Caustic Potash, no ammoniacal odour is given off.

Preparations.—Trituration. Solution in distilled water, 1 in 20. The 1 attenuation from this solution should be made with distilled water, 3^x to 3 with distilled water to which 5 per cent of rectified spirit has been added, 7^x with dilute alcohol, 4 with spirit of 20 O.P., and 5 and upwards with rectified spirit.

Proper forms for dispensing.—1^x *to* 3, *Trituration; or* 1 *in* 20 *to* 3, *watery Solution.* 4 *and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

ALUMINA.

Contractions—Alum. Alm.

Present name.—Alumina. $Al_2O_3.3H_2O$.

Oxide of Aluminium. German, *Thonerde, Alaunerde;* French, *Alumine;* Italian, *Allumina;* Spanish, *Alúmina.*

Prepared by precipitating Ammonia Alum with solution of Ammonia as follows:—

Take of

Ammonia Alum in crystals - -	1 ounce;
Strong Solution of Ammonia -	½ fluid ounce;
Distilled Water - - - -	a sufficiency.

Powder the alum and dissolve it in 10 fluid ounces of warm distilled water; add the ammonia, collect the precipitate on a calico filter, and wash it with hot distilled water until the washings cease to give a precipitate with chloride of barium, or any odour of ammonia when mixed with caustic potash and boiled. The alumina is then carefully dried on a water bath and pulverized.

Characters.—A very fine white powder, soft to the touch, tasteless, infusible, forming a paste with water, but not dissolving in it.

Preparation.—Trituration.

Proper forms for dispensing.—1^x *to* 3, *Trituration only.* 4 *and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

AMBRA GRISEA.

Contractions.—Ambra. Amb.

Synonyms.—Ambra Ambrosiaca, *Linn.*, Ambra vera, Ambra maritima.

Ambergris. German, *Graue Ambra;* French, *Ambre gris;* Italian, *Ambra grigia;* Spanish, *Ambar gris.*

This is now generally believed to be a morbid secretion from the liver of the spermaceti whale (*Physeter macrocephalus*, Linn.). It has been extracted from the rectum of the whale in the South Sea Fishery, but is usually found floating on the sea along the coasts of Coromandel, Japan, the Moluccas, and Madagascar. The most esteemed is that from Madagascar and Sumatra.

Characters.—Large opaque balls, rough to the touch, formed of concentric layers, friable, lighter than water, spongy, of a greyish-brown colour externally, traversed within by black and yellowish-red streaks and full of whitish specks. There often occur in the interior, the beak, and other hard parts of different species of cuttlefish, especially *Sepia octop.*, and *S. moschata.* It has a peculiar agreeable odour, somewhat aromatic, is almost tasteless, and when heated softens like wax, and burns readily with a bright flame, leaving very little residue. Soluble in ether and in absolute alcohol by the aid of heat, and partially so in rectified spirit.

Preparations.—Trituration. Tincture, 1 in 20, using absolute alcohol. Process III.

Proper forms for dispensing.—1^x to 3, *Trituration; or ϕ and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

AMMONIACUM.

Contractions.—Ammiac. Am.-g.

Dorema Ammoniacum, *Don, Trans. Linn. Soc. Nat. ord.*, UMBELLIFERÆ.

Gum Ammoniac. German, *Ammoniak;* French, *Gomme ammoniaque;* Italian, *Ammoniaco;* Spanish, *Goma ammoniaco.*

Habitat.—Persia and the Punjaub.

Part employed.—The gum resin which exudes from the stem.

Characters.—In tears or masses; the tears from 2 to 8 lines in diameter, pale cinnamon brown, breaking with a smooth, shining, opaque white surface; the masses composed of agglutinated tears, hard and brittle when cold, but readily softened by heat. Has a faint odour, and a bitter, acrid, nauseous taste. Rubbed with water, it forms a nearly white emulsion. It is partially soluble in ether and alcohol.

Preparation.—Trituration.

Proper forms for dispensing.—1^x *to* 3, *Trituration only.* 4 *and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

AMMONIUM CARBONICUM.

Contractions.—Ammon.-carb. Am.-c.

Synonyms.—Ammoniæ Carbonas, Sesquicarbonate of Ammonia.

Present name.—Ammonic Sesquicarbonate. $2\,[(NH_4)_2CO_3]CO_2$.

Sal-volatile. German, *Flüchtiges Laugensalz; Kohlensaures Ammoniak;* French, *Ammoniaque carbonate.*

A volatile and pungent ammoniacal salt, produced by submitting a mixture of Sulphate of Ammonia or Chloride of Ammonium and Carbonate of Lime to sublimation.

Characters and Tests.—In translucent crystalline masses, with a strong ammoniacal odour and alkaline reaction; soluble in cold water, more sparingly in spirit. It volatilizes entirely when heated, and is readily dissolved by acids with effervescence. If diluted Nitric Acid be added to it in slight excess, and the solution be boiled, it will give no precipitate with Chloride of

Barium or Nitrate of Silver. 59 grains dissolved in 1 ounce of distilled water will be neutralized by 1,000 grain measures of the volumetric solution of Oxalic Acid.

$$\left.\begin{array}{l}\text{20 grains of Carbonate}\\ \quad\text{of Ammonia.}\end{array}\right\}\ \text{neutralize}\ \left\{\begin{array}{l}23\tfrac{1}{2}\text{ grains Citric Acid,}\\ 25\tfrac{1}{2}\text{ grains Tartaric Acid.}\end{array}\right.$$

Preparation.—Solution in distilled water for 1^x, using dilute alcohol for 1 and rectified spirit for all above.

Proper forms for dispensing.—1^x *and* 1, *Solution only.* 3^x *and upwards, Tincture, Pilules, or Globules.*

AMMONIUM CAUSTICUM.

Contractions.—Ammon.-caust. A.-cs.

Synonym.—Liquor Ammoniæ Fortior.

Present name.—Ammonic Hydrate. $NH_4.HO$.

A strong solution of Ammoniacal Gas (NH_3) in water, having a specific gravity of 0·891, and containing 32·5 per cent. by weight.

Characters and Tests.—A colourless liquid, with a characteristic and very pungent odour, and strong alkaline reaction. Sp. gr. 0·891. 52·3 grains by weight require for neutralization 1,000 grain measures of the volumetric solution of Oxalic Acid, 1 fluid drachm contains 15·83 grains of Ammonia, NH_3. When diluted with four times its volume of distilled water, it does not give precipitates with solution of Lime, Oxalate of Ammonia, Sulphide of Ammonium, or Ammonio-Sulphate of Copper ; and, when treated with an excess of Nitric Acid, is not rendered turbid by Nitrate of Silver or by Chloride of Barium.

Preparation.—3 fluid drachms diluted to 1 fluid ounce with distilled water, will form the 1^x attenuation. Water should be used for making 1, then dilute alcohol up to 2, and afterwards rectified spirit.

Proper forms for dispensing.—1^x *to* 2, *Solution only.* 5^x *and upwards, Tincture, Pilules, or Globules.*

N.B.—This preparation is liable to lose strength by keeping; hence the 1^x attenuation should be prepared immediately after it has been found to correspond to the specific gravity required.

AMMONIUM MURIATICUM.

Contractions.—Ammon.-mur. Am.-m.

Synonym.—Ammonii Chloridum.

Present name.—Ammonic Chloride. NH_4Cl.

Sal Ammoniac. German, *Salmiak;* French, *Hydrochlorate d'ammoniaque;* Italian, *Sale ammoniaco;* Spanish, *Sal amoniaco.*

The ordinary commercial salt dissolved in distilled water, and re-crystallized. It is usually prepared on the large scale from the ammoniacal liquid of gas works by treatment with hydrochloric acid and sublimation.

Characters and Tests.—In colourless, inodorous crystals; soluble in water and in rectified spirit. Its aqueous solution, when heated with Caustic Potash, evolves Ammonia, and when treated with Nitrate of Silver forms a copious curdy precipitate. When heated it volatilizes without decomposition, and leaves no residue.

Preparations.—Trituration. Solution in distilled water for 1^x, and rectified spirit for 1 and upwards.

Proper forms for dispensing.—1^x *to* 3, *Trituration; or* 1^x *Solution.* 1 *and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

ANACARDIUM.

Contractions.—Anac. Ana.

Semecarpus Anacardium, *Linn.* *Nat. ord.*, ANACARDIACEÆ.

Synonyms.—Anacardium officinarum, A. orientale.

Fig.—Flora Hom., pl. 4.

Marking-nut Tree.—German, *Elephanten Lœusebaum, Anacardien Baum;* French, *Anacardien:* Italian, *Anacardos;* Spanish, *Anacard.*

Habitat.—Dry mountainous forests in Asia.

Part employed.—The juice contained in the cells under the external rind of the nut.

Characters.—A blackish-brown, heart-shaped nut, with a somewhat reddish tinge, containing a corrosive resinous juice, in cells between the hard outside shell and the sweet kernel; the juice is at first pale and of the thickness of honey, but afterwards turns blackish-brown, and dries up.

N.B.—It is very necessary to distinguish between the Marking-nut Tree, which is evidently the one Hahnemann described, and the Cashew Nut *(Anacardium occidentale)*, which is often mistaken for it. It is quite possible that they may possess similar actions, but it is essential that homœopathists should use the precise species which has been employed in the proving.

Preparation.—Trituration of the resinous juice.

N.B.—A tincture of the nut has been used, but as the black juice is only partially and very sparingly soluble in alcohol or water, it is of very indefinite strength and cannot be recommended.

Proper forms for dispensing.—1^x *to* 3, *Trituration only.* 4 *and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

ANGUSTURA.

Contractions.—August. Ang.

Galipea Cusparia, *D.C.* *Nat. ord.*, RUTACEÆ.

Synonyms.—Cusparia febrifuga, Bonplandia trifoliata.

Fig.—Flora Hom., pl. 5.

Angustura Bark, Cusparia. German, *Angustura rinde;* French, *Ecorce d'Angusture;* Italian, *Angustura;* Spanish, *Quina de Carony;* Native name, *Orayuri.*

Habitat.—Tropical South America.

Part employed.—The bark.

Characters.—Flat pieces or incomplete quills, from 2 to 8 inches long, and between ½ inch and 1½ inch broad, ½ line to 3 lines in thickness, consisting of epidermis and proper bark. Outer surface dirty greyish-yellow, often speckled in the smaller pieces with lighter grey spots and elevations. Inner surface dark brown. Substance of the bark yellowish-brown. The transverse fracture is smooth, and somewhat resinous in appearance. The powder is like that of Rhubarb. It has a peculiar odour, and a bitter, hot, aromatic taste.

Distinguished from false Angustura by its outer surface not being turned dark green, nor its fracture red, by Nitric Acid.

Preparations.—Tincture, using dilute alcohol. Process I. Trituration.

Proper forms for dispensing.—ϕ *and upwards, Tincture, Tincture-trituration, Pilules, or Globules; or* 1^x *to* 3, *Trituration.*

ANTHRAKOKALI.

Contractions.—Anthrak. Ank.

The substance proved under this name is produced by the action of fused Caustic Potash upon a peculiar kind of pit-coal obtained at Fünfkirchen, in Hungary, and hence no other kind of coal should be used. It has a very complex chemical composition, the particulars of which have not yet been ascertained.

In preparing it, 7 parts by weight of Caustic Potash are fused in a polished iron vessel, and 5 parts by weight of very finely pulverized Fünfkirchen pit-coal are carefully stirred into it, and the vessel is then removed from the fire and the stirring continued until the mixture becomes solid, when it should be rapidly reduced to powder in a warm mortar, and preserved in well-stoppered bottles.

Characters and Test.—A black powder, greasy to the touch and deliquescent. 5 grains will yield a dark brown solution with one fluid ounce of water; so dark, indeed, that after all insoluble matter has subsided the solution is translucent only in thin layers.

Preparation.—Trituration.

Proper forms for dispensing.—1^x *to* 3, *Trituration only.* 4 *and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

ANTIMONIUM CRUDUM.

Contractions.—Ant.-crud. Ant.

Synonyms.—Stibium Sulphuretum Nigrum. Antimonium Nigrum.

Present name.—Antimonious Sulphide. Sb_2S_3.

Native Sesquisulphide of Antimony. German, *Schwefelspiessglanz;* French, *Sulfure d'Antimoine;* Italian, *Antimonio crudo;* Spanish, *Protosulfuro de antimonio.*

This is the commonest ore of Antimony, and occurs abundantly in many countries; that found in Hungary is very pure, according to Büchner.

Characters and Tests.—Masses consisting of closely aggregated needles, having a metallic lustre, leaden grey colour inclining to steel-grey, which is unchanged in the streak. The needles are extremely brittle, and melt at a heat below redness, emitting a sulphurous smell. They dissolve slowly in boiling Hydrochloric Acid, evolving the odour of Sulphuretted Hydrogen. If the solution be filtered and mixed with water, it gives a white precipitate, which is at once changed to orange by Sulphuretted Hydrogen.

Proper forms for dispensing.—1^x *to* 3, *Trituration only.* 4 *and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

ANTIMONIUM TARTARICUM.

Contractions.—Ant.-tart. Tar.

Synonyms.—Antimonium Tartaratum, Antimonii Potassio-tartras, Tartarus Emeticus.

Present name.—Potassic-antimonious Tartrate. $2K(SbO)C_4H_4O_6.H_2O$.

Tartar Emetic. German, *Brechweinstein;* French, *Tartrate de Potasse et d'Antimoine.*

It may be obtained by the following process:—

Take of Oxide of Antimony	5 ounces;
Acid Tartrate of Potash, in fine powder	6 ounces;
Distilled Water	2 pints.

Mix the oxide of antimony and acid tartrate of potash with sufficient distilled water to form a paste, and set aside for twenty-four hours. Then add the remainder of the water, and boil for a quarter of an hour, stirring frequently. Filter, and set aside the clear filtrate to crystallize. Pour off the mother liquor, evaporate to one-third, and set aside, that more crystals may form. Dry the crystals on filtering paper at the temperature of the air. It must be purified by recrystallisation should it not answer the following

Characters and Tests.—In colourless transparent crystals, exhibiting triangular facets, soluble in water, and less so in proof spirit. It decrepitates and blackens upon the application of heat. Its solution in water gives with Hydrochloric Acid a white precipitate, soluble in excess, and which is not formed if Tartaric Acid be previously added. 20 grains dissolve without residue in a fluid ounce of distilled water at 60°, and the solution gives with Sulphuretted Hydrogen an orange precipitate, which, when washed and dried at 212°, weighs 10·17 grains. 10 grains dissolved in a fluid ounce of Hydrochloric Acid give no precipitate when the solution is saturated with Sulphuretted Hydrogen. The gas delivery tube should be moistened with Hydrochloric Acid before dipping it into the liquid.

Preparations.—Trituration. Solution in distilled water to which 5 per cent. of rectified spirit has been added for 1, 3^x, and 2. Dilute alcohol may be used after 2, and rectified spirit for 3 and upwards.

Proper forms for dispensing.— 1^x *to* 3, *Trituration; or* 1 *to* 5^x, *Solution.* 3 *and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

APIS MELLIFICA.

Contractions.—Apis. Aps.

Apis mellifica, *Linn.* *Class,* INSECTA; *Ord.,* HYMEN-

OPTERA; *Section,* ACULEATA; *Subsection,* MELLIFERA; *Family,* APIDÆ.

The Common Hive Bee. German, *Honig Biene;* French, *Abeille;* Italian, *Api;* Spanish, *Abeja.*

The active part is the poison emitted from the sting of the female or working bee when enraged.

Preparation.—There is much difference of opinion as to how the poison should be procured. Dr. Hering recommends seizing the live bee with a pair of forceps, and receiving the ejected poison on a piece of sugar. Dr. Marcy suggests catching the bees and plunging them into dilute alcohol. The following plan is perhaps the easier, and has been found practically to yield an efficient tincture.

Take a clean, wide-mouthed, stoppered bottle, and, standing by the side of a bee-hive in full work, place the mouth of the bottle against the entrance to the hive so as to catch the bees as they emerge from it, closing every aperture to prevent their escape on either side, (the early morning is the safest time for doing this); then strike the hive sharply and repeatedly with a cane until a sufficient number have been introduced into the bottle, where they become much irritated by their imprisonment and try vainly to sting the operator's hand through the glass. While they are still enraged, introduce a few drops of Chloroform, and as soon as they are stupefied shake them out of the bottle, pick out all the drones, cut off the posterior half of the abdomen of each female bee with sharp scissors, and let it drop into a glass or porcelain capsule, the weight of which has been previously ascertained. Re-weigh the whole, and having calculated the weight of the particles, place them in a mortar, pour over them a sufficiency of dilute alcohol to cover them, and then bruise carefully till the whole is reduced to a pulp; return the pulp into the bottle, and carefully wash the capsule and mortar with dilute alcohol, transferring the washings also into the bottle, using in all 10 fluid ounces to every ounce by weight. Put in the stopper and let the parts macerate for two days, shaking repeatedly, so that any of the poison which has been ejected against the glass may be taken up by the spirit. Afterwards filter the tincture, but do not press the pieces of bee.

Test.—If well prepared, it will cause an erythematous patch of about the size of a shilling when the skin is pricked by a needle previously dipped in the tincture.

The 1^x attenuation should be prepared with dilute alcohol, 1 with proof spirit, 3^x with spirit 20 O.P., and all above with rectified spirit.

Proper forms for dispensing.—*ϕ and upwards, Tincture, Pilules, or Globules.*

N.B.—Tincture-trituration could be made, but it is not recommended.

APOCYNUM CANNABINUM.

Contractions.—Apoc.-can. Apo.

Apocynum cannabinum, *Linn.* *Nat. ord.*, APOCYNACEÆ.

Synonym.—Apocynum pubescens.

Fig.—Hooker, Flor. Bot. Amer., tab. cxxxix.

American Indian Hemp.

Habitat.—Canada and United States.

Part employed.—The fresh root.

Characters.—It is a perennial plant. *Stems* herbaceous, erect, branching, of a brown colour, and 2 or 3 feet in height. *Leaves* opposite, oblong-ovate, acute at both ends, and somewhat downy beneath. *Cymes* paniculate, many-flowered and pubescent.

Corolla small and greenish externally, with a tube not longer than the calyx, and with an erect border; the internal parts of the flower are pinkish or purple. *Pod* or follicle from 3 to 5 inches long, and resembles the pods of the *Asclepias syriaca*, or common milk-weed, but is much smaller. *Root* horizontal, 5 or 6 feet in length, about one-third of an inch thick, dividing near the end into branches which terminate abruptly; of a yellowish-brown colour when young, but dark chestnut when old; of a strong odour, and a nauseous, somewhat acrid, permanently bitter taste.

Preparation.—Tincture, corresponding in alcoholic strength with proof spirit, prepared in and imported from North America. Process I.

Proper forms for dispensing.—*ϕ and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

ARGENTUM METALLICUM.

Contractions.—Arg.-met. Arg.

Synonyms.—Argentum foliatum (silver leaf). Argentum præcipitatum (precipitated silver).

Silver. Ag. German, *Silber;* French, *Argent;* Italian *Argento;* Spanish, *Plata.*

The silver used must be chemically pure, and hence it is best to prepare it from the purified nitrate (1) by precipitation with Hydrochloric Acid, and then fusing the carefully washed and dried chloride with anhydrous Carbonate of Soda. The metal can then be beaten into the thinnest leaf by a trustworthy gold and silver beater. Or, (2) it may be precipitated in a pure and finely divided state by boiling with Formic Acid a solution of one part of the nitrate in at least 500 parts of water, and then carefully washed and dried.

Characters and Tests.—Thin white leaf having a high degree of lustre and untarnished, or a fine grey powder. If Ammonia be added in excess to a solution of the metal in Nitric Acid, the resulting fluid exhibits neither colour nor turbidity.

Preparation.—Trituration.

Proper forms for dispensing.—1^x *to* 3, *Trituration only.* 4 *and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

ARGENTUM NITRICUM.

Contractions.—Arg.-nit. Ag.-n.

Synonym.—Argenti Nitras.

Present name.—Argentic Nitrate. $AgNO_3$.

Nitrate of Silver. Lunar Caustic. German, *Salpetersaures Silber;* French, *Argent Nitrate.*

It may be prepared as follows:—

Take of Purified Silver	- -	3 ounces;
Nitric Acid	- - -	2½ fluid ounces;
Distilled Water	- -	5 fluid ounces.

Add the nitric acid and the water to the silver in a flask, and apply a gentle heat till the metal is dissolved. Decant the clear liquor from any black powder which may be present into a porcelain dish, evaporate, and set aside, to crystallize; pour off the liquor, and again evaporate and crystallize. Let the crystals drain in a glass funnel, and dry them by exposure to the air, carefully avoiding the contact of all organic substances. Nitrate of silver must be preserved in bottles carefully stoppered.

Characters and Tests.—In colourless tabular crystals, the primary form of which is the right rhombic prism; soluble in distilled water and in rectified spirit. The solution gives with

Hydrochloric Acid a curdy white precipitate, which darkens by exposure to light, and is soluble in solution of Ammonia. A small fragment heated on charcoal with the blow-pipe, first melts, and then deflagrates, leaving behind a dull white metallic coating. 10 grains dissolved in 2 fluid drachms of distilled water give with Hydrochloric Acid a precipitate, which, when washed and thoroughly dried, weighs 8·44 grains. The filtrate when evaporated by a water-bath leaves no residue.

Preparation.—Solution in distilled water for 1^x; continue to use distilled water up to 3, then use dilute alcohol for 4, and afterwards rectified spirit. The attenuations should be kept in amber-glass stoppered bottles.

The salt ought not to be prepared as a trituration, on account of its action on organic matter.

Proper forms for dispensing.—*Below 4, watery Solution only. 4, dilute Tincture only. 5 and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

ARNICA.

Contraction.—Arn.

Arnica montana, *Linn.* *Nat. ord.*, COMPOSITÆ.

Fig.—Flora Hom., pl. 6.

Mountain Arnica, Leopard's Bane. German, *Berg Wohlverleih, Fallkraut;* French, *Arnique des Montagnes;* Italian, *Arnica;* Spanish, *Arnica, Tobaco de Montana.*

Habitat.—Mountainous parts of middle and Southern Europe.

Flowering time.—July and August.

Parts employed.—1. The entire fresh plant, including the root. 2. The flowers. 3. The root.

Characters.—*Rhizome* from 1 to 3 inches long and 2 or 3 lines thick, cylindrical, contorted, rough from the scars of coriaceous leaves, and furnished with numerous long slender fibres; has a peppery taste and peculiar odour. *Leaves* ovate, entire, sessile on the crown of the root. *Stem* 6 to 7 inches high, round, and unbranched, rising from the centre of the crown of leaves. *Flowers* large, rayed, and of a beautiful yellow. *Fruit* a hairy pappus. *Involucre* consisting of two rows of scales.

Preparations.—1. Tincture of the entire fresh plant made in its native country, corresponding in alcoholic strength with proof spirit. 2. Tincture of the dried flowers only, using proof spirit. 3. Tincture of the root only, using proof spirit. Process I, in each case.

Proper forms for dispensing.—*ϕ and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

ARSENICUM ALBUM.

Contraction.—Ars.

Synonym.—Acidum Arseniosum.

Present name.—Arsenious Anhydride. As_2O_3.

Arsenious Acid, White Arsenic. German, *Weisser Arsenik;* French, *Oxide blanc d'Arsenic;* Italian, *Acido Arsenioso;* Spanish, *Arsenico blanco.*

The resublimed Arsenious Acid of the manufacturing chemists may be purified by further sublimation as follows:—

Place the powdered arsenious acid in the centre of a shallow porcelain dish, in a heap shaped so as to correspond nearly with the shape of the dish, and invert over it a smaller shallow dish of the same material furnished with a flat rim; cover this with an inverted beaker accurately fitted to prevent the escape of any fumes which may issue from the apertures below it, and apply a heat by means of a sand bath placed under a flue until the sublimate obtained ceases to have either a pink or yellow tint; cleanse the upper porcelain dish and continue the sublimation slowly until the operation is completed.

Characters and Tests.—Colourless semitransparent octohedral crystals, or a crystalline powder of snowy whiteness, of a slightly sweetish taste and inodorous. Heated in a dry tube, it is entirely converted into vapour and is deposited on the cooler part of the tube in minute brilliant octohedral crystals. Heated with charcoal, it emits a strong garlic odour. It dissolves in Hydrochloric Acid, and the solution gives with Sulphuretted Hydrogen a yellow precipitate, soluble in Carbonate of Ammonia. In neutral solutions Ammonio-Nitrate of Silver causes a yellow precipitate, easily soluble in weak acids and Ammonia. Four grains of it dissolved in boiling water with eight grains of Bicarbonate of Soda, discharge the colour of 808 grain-measures of the volumetric solution of Iodine.

Preparations.—Solution as follows: Take 96 grains in powder, and put it into a flask capable of holding 30 fluid ounces; then add 20 fluid ounces of distilled water; mark the flask to denote the quantity, so that distilled water may be supplied from time to time to replace that which evaporates. Boil constantly until the whole of the arsenious acid is taken up and the solution has been reduced to 15 fluid ounces, and when cold add sufficient rectified spirit to increase the bulk to 1 pint.

Trituration.

N.B.—There is a great difference in the solubility of different preparations of arsenious acid; but the above solution of 1 in 100 will be found to be a good preparation for keeping, and from which the higher attenuations may be made. The 3^x should be made with spirit 20 O.P., and all above that with rectified spirit.

Proper forms for dispensing.—1^x *to* 3, *Trituration; or* 1, *Solution.* 3^x *and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

ARUM MACULATUM.

Contractions.—Arum. Aru.

Arum maculatum, *Linn.* *Nat. ord.*, ARACEÆ.

Synonyms.—Barba Aaronis, Serpentaria minor, Zingiber album, Z. germanicum.

Fig.—Engl. Bot., t. 1298.

Cuckoo-pint, Wake Robin, Lords and Ladies. German, *Gefleckter Aron, Aronswurzel;* French, *Gonet, Pied de Veau.*

Habitat.—In woods and thickets and under hedges, chiefly in Central Europe, frequent in England and Ireland.

Flowering time.—Spring.

Part employed.—The fresh tuber or corm.

Characters.—An acrid white tuber or corm, brownish-yellow externally, having an acrid biting taste like pepper, and abundance of milky juice. *Leaves* radical, ovate-hastate, of a dark shining green, frequently spotted with purple or marked with pale-whitish veins.

Time for collecting.—Before the leaves are fully developed. It should always be procured with the herbaceous part attached, as it is otherwise difficult to identify.

Preparation.—Tincture, corresponding in alcoholic strength with dilute alcohol. Process I.

Proper forms for dispensing.—ϕ *and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

Average loss of moisture, 85 per cent.

ASAFŒTIDA.

Contractions.—Asaf. Asa.

Narthex Assafœtida, *Falconer.* *Nat. ord.*, UMBELLIFERÆ.

Synonyms.—Ferula Assafœtida, *Linn.* Assafœtida disgunensis, *Kœmpfer.*

Fig.—Flor. Hom., pl. 7.

Asafœtida. German, *Stinkasand, Stechenkraut, Teufelsdreck;* French, *Asafétida;* Italian, *Assafœtida, Zaffetica;* Spanish, *Asafetida.*

Habitat.—Persia, Afghanistan, and the Punjaub.

Part employed.—The gum-resin, obtained by incision from the living root.

Characters.—In irregular masses, partly composed of tears, moist or dry. Colour, when freshly broken, opaque white, becoming purplish-pink, and ultimately dull yellow or pinkish-brown. Taste bitter, acrid. Odour fœtid, alliaceous.

Time for collecting.—In spring, from plants about four years old, before the growth of the flowering stem.

Preparation.—Tincture, using rectified spirit. Process III.

Proper forms for dispensing.—*ϕ and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

ASARUM.

Contractions.—Asar. Asr.

Asarum europæum, *Linn.* *Nat. Ord.*, ARISTOLOCHIACEÆ.

Synonym.—Asarum vulgare.

Fig.—Flor. Hom., pl. 8.

Asarabacca, Fole's Foot, Hazelwort, Wild Nard. German, *Haselkraut, Haselwurz;* French, *Azaret, Bondelle, Cabaret de l'Europe, Orielle d'Homme;* Italian, *Asaro.*

Habitat.—Mountainous woods in most parts of Europe. Rare in Britain, except in a few localities in Northern England, and in Wiltshire.

Flowering Time.—May.

Parts employed.—The entire plant, including the root.

Characters.—A shortly creeping root stock, with two kidney shaped leaves on long stalks; between them a single greenish brown flower, about half an inch long, on a short re-curved stalk; perianth divided to the middle into three broad pointed lobes. The leaves as they fade, emit a peculiar pungent odour.

Time for collecting.—When in flower.

Preparation.—Tincture, corresponding in alcoholic strength with proof spirit. Process I.

Proper forms for dispensing.—*ϕ and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

ATROPINUM.

Contractions.—Atrop. Atp.

Present name.—Atropine or Atropia. $C_{17}H_{23}NO_3$.

German, *Alkaloid der Tollkirsche.*

An alkaloid obtained from Belladonna, especially from the root.

Characters and Tests.—Colourless acicular crystals, sparingly soluble in water, more readily in alcohol and in ether. Its solution in water has an alkaline reaction, gives a citron-yellow precipitate with Ter-chloride of Gold, has a bitter taste, and powerfully dilates the pupil. It leaves no ash when burned with free access of air. It is an active poison.

Preparations. — Trituration. Solution in rectified spirit.

Proper forms for dispensing.—3^x to 3, *Trituration; or* 3^x *and upwards, Tincture, Tincture - trituration, Pilules, or Globules.*

ATROPINUM SULPHURICUM.

Contractions.—Atrop-s. At-s.

Synonym.—Atropiæ Sulphas.

Present name.—Atropic Sulphate.

This may be prepared as follows :—

Take of	Atropia - - -	120 grains ;
	Distilled Water - -	4 fluid drachms ;
	Diluted Sulphuric Acid	a sufficiency.

Mix the atropia with the water and add the acid gradually, stirring them together until the alkaloid is dissolved, and the solution is neutral. Evaporate it to dryness at a temperature not exceeding 100°.

Characters and Tests.—A colourless powder, soluble in water, forming a solution which is neutral to test-paper, and when applied to the eye dilates the pupil as the solution of Atropia does. It leaves no ash when burned with free access of air. It is a powerful poison.

Preparation.—Solution in distilled water for 1^x, using distilled water to which 5 per cent. of rectified spirit has been added for 1, dilute alcohol for 3^x, and after that rectified spirit.

Proper forms for dispensing.—1 *and* 3^x, *Solution only.* 2 *and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

AURUM METALLICUM.

Contractions.—Aur.-met. Aur.

Synonyms. — Aurum foliatum (gold leaf). Aurum præcipitatum (precipitated gold.)

Gold. Au. German, *Gold, Blattgold;* French, *Or, Or en feuilles;* Italian, *Oro;* Spanish, *Oro.*

Chemically pure gold (1) beaten into the thinnest leaf; or (2) precipitated in a finely divided state by the addition of Oxalic Acid to a solution of one part of the pure trichloride in at least 500 parts of water, and carefully washed and dried.

Characters.—Thin leaf of a rich yellow colour and high metallic lustre, or a very fine powder which, when suspended in water, is brown by reflected, but purple when viewed by transmitted light.

Preparation.—Trituration.

Proper forms for dispensing.—1^x *to* 3, *Trituration only.* 4 *and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

AURUM MURIATICUM.

Contractions.—Aur.-mur. Au.-m.

Present name.—Auric Chloride. $AuCl_3$.

Trichloride of Gold. German, *Gold Chloride;* French, *Trichlorure d'Or.*

Prepared by dissolving pure Gold in *Aqua Regia,* a mixture of nitric and hydrochloric acids, according to the following process.

Take of Fine Gold, reduced by a rolling machine to a thin lamina	62½ grains;
Nitric Acid - - -	1½ fluid ounce;
Hydrochloric Acid - -	7 fluidounces;
Distilled Water - -	A sufficiency.

Place the gold in a flask with the nitric acid and 6 fluid ounces of the hydrochloric acid, first mixed with 4 fluid ounces of the water, and digest until it is dissolved. Add to the solution the additional fluid ounce of hydrochloric acid, evaporate at a heat not exceeding 212° until acid vapours cease to be given off.

Dissolve the chloride of gold thus obtained in a fluid ounce of the water, and then dilute the solution with more water until it has the exact bulk of 2 fluid ounces.

Preparation.—The solution recommended above forms the 1^x attenuation; distilled water is used for 1, dilute alcohol up to 2, and rectified spirit beyond 2.

The attenuations should be kept in amber glass, stoppered bottles.

Proper forms for dispensing.—1^x *to* 2, *Solution only.* 5^x *and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

BAPTISIA.

Contractions.—Baptis. Bap.

Baptisia tinctoria, *R. Brown.* *Nat. ord.*, LEGUMINOSÆ.

Synonyms.—Sophora tinctoria, *Linn.* Podalyria tinctoria, *Michaux.*

Fig.—Bigelow, Fl. Bot., 2nd edit., p. 170.

Wild Indigo. German, *Wilder Indigo.*

Habitat.—Dry hills, Canada to Florida, and west to Mississippi.

Flowering time.—July to September.

Part employed.—The fresh bark of the root.

Characters.—*Root* perennial, dark brown externally, having a peculiar odour and a nauseous, bitter, somewhat acrid taste. *Stem* about 2 feet high, bushy. *Leaflets* $\frac{1}{2}$ to 1 inch long, rounded, and often emarginate at apex. *Flowers* rather small, yellow. It is said that this plant will yield a considerable quantity of Indigo.

Time for collecting.—In early spring, or when the leaf falls in autumn.

Preparation. — Tincture, corresponding in alcoholic strength with proof spirit, prepared in, and imported from, North America. Process I.

Proper forms for dispensing.—*φ and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

BARYTA ACETICA.

Contractions.—Bar-a. Ba-a.

Present name.—Baric Acetate. $Ba(C_2H_3O_2)_2.H_2O$.

Acetate of Barium. German, *Essigsaurer Baryt;* French, *Acetate de baryte.*

Prepared by dissolving Carbonate of Barium in dilute Acetic Acid, evaporating the solution on a water bath, and crystallizing the salt.

Characters and Tests. — Colourless transparent flat prisms, readily soluble in water, the solution giving an immediate white precipitate with a solution of Sulphate of Lime. When the salt itself is acted upon by Sulphuric Acid, acetic vapours are given off.

Preparation.—Solution in distilled water for 1^x, using dilute alcohol for 1, and after that rectified spirit.

Proper forms for dispensing.—1^x *and* 1, *Solution only.* 3^x *and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

BARYTA CARBONICA.

Contractions.—Bar-c. Ba-c.

Synonym.—Barytæ Carbonas.

Present name.—Baric Carbonate. $BaCO_3$.

Carbonate of Barium. German, *Kohlensaurer Baryt;* French, *Carbonate de baryte.*

Prepared by precipitating a solution of pure Chloride of Barium with Carbonate of Ammonia, collecting the precipitate on a filter, washing carefully, and drying.

Characters and Tests.—A white powder, void of smell and taste, very sparingly soluble in water, but readily dissolved with effervescence by diluted Hydrochloric Acid, and forming a colourless solution, which yields an immediate white precipitate with Sulphate of Lime, but is not affected by Ammonia or by Sulphuretted Hydrogen. The residue obtained by evaporating this solution to dryness on a water bath when treated with absolute alcohol yields a filtrate which, mixed with an equal volume of distilled water and then precipitated by warming with Hydrofluosilicic Acid and allowed to stand several hours, is not further precipitated, or but slightly, by the addition of diluted Sulphuric Acid. If ten grains be placed on a filter and repeatedly washed with two fluid drachms of distilled water the filtrate will give no precipitate on the addition of Nitrate of Silver.

Preparation.—Trituration.

Proper forms for dispensing.—1^x *to* 3, *Trituration only.* 4 *and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

BARYTA MURIATICA.

Contractions.—Bar-m. Ba-m.

Synonym.—Barii Chloridum.

Present name.—Baric Chloride. $BaCl_2.2H_2O$.

Chloride of Barium. German, *Salzsaurer Baryt, Chlor Barium;* French, *Muriate de baryte.*

Prepared by re-crystallizing the commercial salt.

Characters and Tests.—Flat four-sided tabular crystals, very easily dissolved in water, and then yielding an immediate white precipitate with Solution of Sulphate of Lime, and a curdy white precipitate with Nitrate of Silver, both insoluble in Nitric Acid.

Preparation.—Solution in distilled water for 1^x, using dilute alcohol for 1, and after that rectified spirit.

Proper forms for dispensing.—1^x *and* 1, *Solution only.* 3^x *and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

BELLADONNA.

Contractions.—Bell. Bel.

Atropa Belladonna, *Linn.* *Nat. ord.*, SOLANACEÆ.

Synonyms.—Solanum maniacum. S. furiosum.

Fig.—Flora Hom., pl. 9.

Deadly Nightshade, Common Dwale. German, *Tollkirsche;* French, *Belladone;* Italian, *Belladonna;* Spanish, *Belladona.*

Habitat.—Waste stony places in Southern Europe and West Central Asia. South of England, about old castles and ruins.

Flowering time.—Summer.

Parts employed.—The fresh plant.

Characters.—An erect, glabrous, or slightly downy herb, with perennial root and branching stem. *Leaves* stalked, rather large, ovate, and entire, with a smaller one usually proceeding from the same point. *Flowers* solitary, on short peduncles in the forks of the stem or axils of the leaves. Corolla bell-shaped, pale purplish-blue, nearly one inch long, with five broad short lobes. *Fruit* a black, shining, globular berry.

Time for collecting.—When in full flower.

Preparation.—Tincture, corresponding in alcoholic strength with dilute alcohol. Process I.

Proper forms for dispensing.—*ϕ and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

Average loss of moisture, 87 per cent.; in making the 1^x attenuation, it will therefore be necessary to use about $1\frac{1}{2}$ measure of the mother tincture to $8\frac{1}{2}$ measures of dilute alcohol.

BERBERIS.

Contractions.—Berb. Ber.

Berberis vulgaris, *Linn.* *Nat. ord.*, BERBERIDACEÆ.

Synonyms.—Berberis dumetorum, Spina acida.

Fig.—Flora Hom., pl. 10.

Common Barberry, Pipperidge-bush. German, *Berberitzen Sauerdorn;* French, *L'Epine vinette;* Italian, *Crespino;* Spanish, *Berbero.*

Habitat.—Hedges, thickets, and open woods, over the greater part of Europe, and temperate Asia to the Himalaya.

Flowering time.—Spring or early summer.

Parts employed.—Small branches of the root, or the bark of the larger roots.

Characters.—A glabrous, pale green shrub, six or eight feet high. *Branches* arched and hanging at the ends, furnished with three-lobed thorns at the base of the tufts of leaves. *Leaves* alternate or clustered, ovate, sharply toothed. *Flowers* yellow, in elegant drooping racemes. *Fruit* small, oblong, red berries containing two or three seeds. *Root bark*, brown externally, saffron-coloured within, very bitter.

Time for collecting.—Spring, before flowering; or autumn, when the leaves are falling.

Preparation.—Tincture, corresponding in alcoholic strength with proof spirit. Process I.

Proper forms for dispensing.—*φ and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

Average loss of moisture, 42 per cent.

BISMUTHUM SUB-NITRICUM.

Contractions.—Bism. Bis.

Synonyms.—Bismuthi Subnitras. Bismuthi Magisterium.

Present name.—Bismuth Subnitrate. $Bi_2O_3.2HNO_3$.

White Bismuth. Magistery of Bismuth. Subnitrate of Bismuth. German, *Salpetersaures Wissmuth;* French, *Sous-nitrate de bismuth.*

This may be prepared according to the following process :—

Take of Purified Bismuth, in small pieces	2 ounces ;
Nitric Acid - - - -	4 fluid ounces ;
Distilled Water - - -	A sufficiency.

Mix the nitric acid with 3 ounces of distilled water, and add the bismuth in successive portions. When effervescence has ceased, apply for ten minutes a heat approaching that of ebullition, and decant the solution from any insoluble matter that may be present. Evaporate the solution until it is reduced to 2 fluid ounces, and pour it into half a gallon of distilled water. When the precipitate which forms has subsided, decant the supernatant liquid, add half a gallon of distilled water to the precipitate, stir them well together, and after two hours decant off the liquid, collect and drain the precipitate in a calico filter, press it with the hands, and dry it at a temperature not exceeding 150_o.

Characters and Tests.—A heavy white powder in minute crystalline scales, blackened by Sulphuretted Hydrogen; insoluble in water, but soluble in Nitric Acid mixed with half its volume of distilled water, forming a solution which, poured into water, gives a white precipitate. It forms with Sulphuric Acid diluted with an equal bulk of water a solution which is blackened by Sulphate of Iron. The Nitric Acid solution gives no precipitate with diluted Sulphuric Acid, nor with solution of Nitrate of Silver.

Preparation.—Trituration.

Proper forms for dispensing.—1^x *to* 3, *Trituration only.* 4 *and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

BORAX.

Contraction.—Bor.

Synonyms.—Sodæ Boras. Natrum Biboracicum.

Present name.—Sodic Pyroborate, Acid Borate of Sodium. $Na_2B_4O_7.10H_2O$.

German, French and Spanish, *Borax;* Italian, *Borace.*

Made by purifying the native salt *Tincal* by repeated crystallization. Also prepared artificially by boiling together in proper proportions boracic acid and carbonate of soda.

Characters and Tests.—In transparent colourless crystals, sometimes slightly effloresced, with a weak alkaline reaction; insoluble in rectified spirit, soluble in water. A hot saturated solution, when acidulated with any of the mineral acids, lets fall, as it cools, a scaly, crystalline deposit (Boracic Acid), the solution of which in spirit burns with a green flame. 191 grains dissolved in 10 fluid ounces of distilled water require for saturation 1,000 grain measures of the volumetric solution of Oxalic Acid.

Preparations.—Trituration. Solution in distilled water to which 5 per cent. of rectified spirit has been added for 1; dilute alcohol for 3^x; rectified spirit for 2 and upwards.

Proper forms for dispensing.—1^x *to* 3, *Trituration; or* 1 *and* 3^x, *Solution.* 2 *and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

BOVISTA.

Contractions. Bovi. Bov.

Lycoperdon bovista, *Sow.* *Nat. ord.*, FUNGI.

Synonyms.—Lycoperdon globosum, Bovista nigrescens, Fungus ovatus.

Fig.—Flora Hom., pl. 11.

Puff-ball, Molly-puff, Bull-fist. German, *Rauchpilz, Kugelschwamm;* French, *Boviste, Vesse loup;* Italian, *Licoperdo;* Spanish, *Licoperdo.*

Habitat.—On dry meadows and downs in most parts of Europe.

Part employed.—The ripe powder.

Characters.—Stemless; a regular globe, with only two coats; smooth, soft and yellowish-white when young, becoming yellow and then brown. Filled with a white cottony substance, which becomes brown, and contains, when ripe, an immense quantity of extremely fine brown-black powder.

Time for collecting.—August and September.

Preparation.—Trituration.

Proper forms for dispensing.—1^x *to* 3, *Trituration only.* 4 *and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

BROMIUM.

Contractions.—Brom. Bro.

Synonyms.—Bromum. Brominium.

Present name.—Bromine. Br.

German, *Brom;* French, *Brome;* Italian, *Bromo.*

Prepared on a large scale from sea-water and from some saline springs; it may be purified by redistillation into a refrigerated receiver containing water, the distillation being performed at a gentle heat by means of a water bath.

Characters and Tests.—A dark brownish-red, very volatile liquid, with a strong and disagreeable odour. Its specific gravity is 2·976. At the common temperature of the air it gives off red vapours, and at a temperature of 140° it boils. Agitated with solution of Soda in such proportion that the fluid remains very slightly alkaline, it forms a colourless liquid, which, if coloured by the farther addition of a small quantity of the Bromine, does not become blue on the subsequent addition of a cold solution of Starch.

Preparation.—The 1 solution is made by dissolving 9 minims of bromine (equal to about 24 grains by weight) in 5 fluid ounces of distilled water; 3^x with dilute alcohol, and all above with rectified spirit.

N.B.—Pure bromine should be kept under water in well-stoppered bottles, and the low attenuations should always be made fresh as required.

Proper forms for dispensing.—1 *and* 3^x, *Solution only.* 2 *and upwards, Tincture, Pilules, or Globules.*

BRYONIA.

Contraction.—Bry.

Bryonia alba *(Linn.)* and dioica *(Jacq.)* *Nat. ord.*, CUCURBITACEÆ.

Synonyms.—Vitis alba, Bryonia vera.

Fig.—Flora Hom., pl. 12.

White Bryony, Wild Hops. German, *Zaunrübe;* French, *Coulevre;* Italian, *Vita bianca;* Spanish, *Neuza alba.*

Habitat.—*B. alba*, common in Germany and France; *B. dioica*, common in England, in hedges and thickets.

Flowering time.—June and July.

Part employed.—The fresh root.

Characters.—*Root* a large, fleshy, succulent, branched rootstock, of yellowish-white colour, with circular wrinkles; having an acrid, bitter, disagreeable taste and peculiar odour. *Stems* climbing to a great length and, as well as the whole plant, rough with minute hairs. *Tendrils* simple or branched and spirally twisted. *Leaves* more or less deeply divided into 5 or 7 broad, angular and coarsely toothed lobes, of which the middle one is the longest. *Calyx* with 5 small teeth. *Corolla* 5 lobed. *Stamens* combined into 3, of which 2 are double and 1 single. *Style* 3 lobed, with capitate stigmas. *Fruit* a globular berry, red or orange, when ripe, in the case of *B. dioica* and black in that of *B. alba.*

Care must be taken not to mistake the root of the *Tamus*

Communis for this, as has frequently happened. For security's sake the root should never be gathered without the stems attached, so that it may be identified.

Time for collecting.—Before the plant flowers, and in October.

N.B.—After much consideration, the two species of Bryonia are recorded as officinal, since, while it is no doubt true that Hahnemann used *Bryonia alba,* yet a large quantity of *Bry. dioica* has been prepared and used in this country, and the action is so similar to the *alba* that few, if any, practitioners can detect the difference.

As the provings were made from the *Bryonia alba,* it is recommended that the attenuations be made from it.

Preparation. — Tincture, corresponding in alcoholic strength with dilute alcohol. Process I.

Proper forms for dispensing.—*ϕ and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

Average loss of moisture: In June, 80 per cent; in October, 71 per cent.

CACTUS.

Contractions.—Cact-gr. Cac.

Cactus grandiflorus, *Linn.* *Nat. ord.,* CACTACEÆ.

Synonym.—Cereus grandiflorus.

Fig.—Andrews' Bot. Repos., vol. iii., pl. 508.

Night-blooming Cereus.

Habitat.—Mexico and West India Islands.

Flowering time.—Summer.

Parts employed.—The youngest and tenderest stems, with the flowers.

Characters.—Stems cylindrical, furnished with five or six slightly prominent ribs, beset with small radiating spines. *Flowers* large and white, opening in the evening and withering before sunrise, having a powerful odour of Benzoic Acid and Vanilla.

Time for collecting.—When flowering.

N.B.—Dr. Rubini, of Naples, who first proved this plant, collected it in the month of July, at which time it blooms in Naples, where it thrives well in the open air. It is suggested that a tincture prepared in its native country be procured, if possible.

Preparation. — Tincture, 1 in 20, corresponding in alcoholic strength with proof spirit. Process II.

Proper forms for dispensing.—*ϕ and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

Average loss of moisture of West Indian plant, 85 per cent.

CALADIUM.

Contractions.—Calad. Cld.

Caladium seguinum, *Vent.* *Nat. ord.*, ARACEÆ.

Synonym. — Arum seguinum, *Linn.* Dieffenbachia Seguina, *Schott.*

Fig.—Bot. Mag., No. 52, pl. 2606.

Poisonous American Arum. Dumb Cane.

Habitat.—West Indies and South America, growing on the wet prairies in the neighbourhood of Paramaribo.

Parts employed.—The fresh herb or the fresh root.

Characters.—Stem round, naked, 4 or 5 feet high, green, abounding with milky juice. *Leaves* amplexicaul, ovoid, smooth, and pointed. The juice makes an indelible stain on linen, and is exceedingly acrid and poisonous.

Time for collecting.—The root when the plant is shooting in spring. The herb when flowering.

Preparation. — Tincture, corresponding in alcoholic strength with proof spirit. Process I.

Proper forms for dispensing.—*φ and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

CALCAREA ACETICA.

Contractions.—Calc-a. Ca-a.

Present name.—Impure Calcic Acetate. $Ca(C_2H_3O_2)_2$.

Impure Acetate of Lime.

The substance used by Hahnemann in his proving was an impure acetate prepared in the following manner :—

Boil oyster-shells for an hour in water, brush off any adhering foreign matter, dry, then, having bruised them, dissolve them in diluted Acetic Acid (B.P.) by heating up to the boiling-point and continuing the process till the acid is saturated, then filter and reduce to one-fifth by evaporation. The solution is deep yellow, and, after a time, precipitates a quantity of brownish mucilage. After this precipitation has taken place, mix with an equal bulk of proof spirit and again filter.

Preparation.—The above, if carefully prepared, will contain about 10 per cent. of acetate of lime, and hence may be considered 1^x. Proof spirit should be used for the 1 attenuation, 20 O.P. for 3^x, and rectified spirit for 2 and upwards.

Proper forms for dispensing.—1^x *and* 1, *Solution only.* 3^x *and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

CALCAREA CARBONICA.

Contractions.—Calc. Ca-c.

Synonyms.—Testæ Ostreæ. Calcarea Ostreorum.

Present name.—Impure Calcic Carbonate. $CaCO_3$.

Impure Carbonate of Lime.

Here also Hahnemann employed the impure Carbonate as it exists in the oyster-shell.

Bruise a tolerably thick, well-cleaned oyster-shell, and select the snow-white portion which exists between the inner and the outer surface, reduce it to a fine powder, place on a calico filter, wash with distilled water, and dry on a water-bath.

Preparation.—Trituration.

Proper forms for dispensing.—1^x *to* 3, *Trituration only.* 4 *and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

CALCAREA CAUSTICA.

Contractions.—Calc-cau. C-cs.

Synonym.—Calcis Hydras.

Present name.—Calcic Hydrate. CaH_2O_2.

Slaked Lime. German, *Kalk;* French, *Chaux;* Italian, *Calce.*

Prepared by burning Carrara marble in a covered crucible until a small portion withdrawn from the centre of the crucible, when it has cooled, no longer effervesces when dropped into Hydrochloric Acid; when cold the whole is placed in a porcelain capsule, and slaked by the addition of half its weight of distilled water.

Characters and Tests.—A white powder which when agitated with distilled water gives, after filtration, a clear solution which has an alkaline reaction, and yields a white precipitate with Oxalate of Ammonia. Soluble almost without residue and without effervescence, in diluted Hydrochloric Acid, and if the solution thus formed be evaporated to dryness, and the residue re-dissolved in water, only a very scanty precipitate forms on the addition of saccharated solution of Lime.

Preparation.—A saccharated solution containing about 1 grain of lime (CaO) in 100 minims, forming the 1 attenuation, should be prepared from the freshly slaked lime as follows: Triturate 1 ounce of the slaked product with 2 ounces of refined sugar, place the mixture in a bottle and add to it 1 pint of distilled water, cork the bottle and set it aside for a few hours, shaking frequently; separate the clear solution by means of a glass siphon, and add distilled water to increase its bulk by one-half; preserve it in a well-stoppered and capped bottle. Distilled water to which 5 per cent. of rectified spirit has been added is used for 3^x, dilute alcohol for 2, and rectified spirit for 5^x and upwards.

Proper forms for dispensing.—1 *to* 2, *Solution only.* 5^x *and upwards, Tincture, Pilules, or Globules.*

CALCAREA PHOSPHORICA.

Contractions.—Calc-p. C-ph.

Synonym.—Calcis Phosphas.

Present name.—Tri-calcic Phosphate. Ca_32PO_4.

Phosphate of Lime. German, *Phosphorsaure Kalkerde;* French, *Phosphate de chaux;* Italian, *Fosfato di calce.*

The preparation used in the earlier provings was made by precipitation from lime-water, by adding phosphoric acid, drop by drop, so as to avoid re-dissolving the precipitate, and forming the superphosphate. The following is, however, a more practical method of preparing it:—

Take of	Chloride of Calcium	3 ounces;
	Phosphate of Soda	2½ ounces;
	Stronger Solution of Ammonia	6 fluid drachms;
	Distilled Water	A sufficiency.

Dissolve the chloride of calcium in 10 fluid ounces of distilled water, filter and to this add the ammonia and the phosphate of soda previously dissolved in 1½ pint of distilled water and filtered. Collect the precipitate on a calico filter, and wash it with hot distilled water until the filtrate gives no precipitate with oxalate of ammonia. Finally dry on a water-bath.

Characters and Tests.—A light white amorphous powder, insoluble in water, but soluble without effervescence in diluted Nitric Acid; the solution continues clear when an excess of Acetate of Soda is added to it, but lets fall a white precipitate on the subsequent addition either of a little Oxalate of Ammonia or of Perchloride of Iron. Its solution in diluted Hydrochloric Acid is not discoloured by Sulphuretted Hydrogen. Ten grains dissolve perfectly and without effervescence in diluted Hydrochloric Acid, and the solution yields with Ammonia a white precipitate, insoluble in boiling solution of Potash, and weighing ten grains when washed and dried.

Preparation.—Trituration.

Proper forms for dispensing.—1^x *to* 3, *Trituration only.* 4 *and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

CALENDULA.

Contractions.—Calend. Cln.

Calendula officinalis, *Linn.* *Nat. ord.*, COMPOSITÆ.

Synonyms.—Caltha officinalis, Solseginum aureum, Verrucaria.

Fig.—Flora Hom., pl. 13.

Marigold. German, *Ringelblume;* French, *Souci de jardin;* Italian, *Calendula;* Spanish, *Calendula.*

Habitat.—France, and in cultivated ground over the greater part of Europe.

Flowering time.—All the summer.

Parts employed.—The leaves and flowers.

Characters.—A well-known garden annual. Short, bushy, pale green herb, stem and leaves pubescent. *Leaves*, lower and middle oval and blunt, upper ones lance-shaped. *Flowers* gold-coloured, radiated, growing from the ends of the branches.

Time for collecting.—Summer.

Preparation.—Tincture, corresponding in alcoholic strength with dilute alcohol. Process I.

Proper forms for dispensing.—*ϕ and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

Average loss of moisture, 86 per cent.

CAMPHORA.

Contractions.—Camph. Cam.

Camphora officinarum, *Nees.* *Nat. ord.*, LAURACEÆ.

Synonym.—Laurus Camphora *(Linn.)*

Fig.—Flora Hom., pl. 14.

Camphor. German, *Kamfer;* French, *Camphre;* Italian, *Canfora;* Spanish, *Alcanfor.*

Habitat.—China and Japan.

Part employed.—The concrete volatile oil, obtained from the wood, and imported in a crude state; purified by sublimation. It has the composition $C_{10}H_{16}O$.

Characters.—White, translucent, tough, and crystalline, with a well-known penetrating odour. Taste pungent, followed by a sensation of cold. It floats on water, and sublimes entirely when heated.

Preparation.—Solution in rectified spirit.

As many practitioners use the saturated solution, which contains nearly 50 per cent., it is admitted as an officinal preparation but must be designated as *Tinctura Camphoræ Saturata* (Tinct. Camph. S.). Should Tinct. Camph. φ be inadvertently ordered the saturated solution should be given as that would most probably be intended.

Proper forms for dispensing.—*Tinct. Camph. S. and* 1^x *and upwards, Tincture, Pilules, or Globules.*[*]

CANNABIS.

Contractions.—Cann. Can.

Cannabis sativa, *Linn.* *Nat. ord.*, CANNABINACEÆ.

Fig.—Flora Hom., pl. 15.

Hemp. German, *Hanf;* French, *Chancre;* Italian, *Canna;* Spanish, *Caña.*

Habitat.—India and Persia. Cultivated extensively in Russia, France, and Italy.

Flowering time.—Early autumn.

Parts employed.—The male and female flowering tops of the cultivated plant.

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[*] Should any preparation of Camphor be ordered other than an officinal one, it must be designated by its ordinary name or by the strength. Thus, for example, a solution of 1 in 6, known as Dr. Quin's Camphor has been long in use and may still be preferred by some to the saturated solution, and if ordered should be distinctly specified.

Characters.—Stem 6 to 8 feet high. *Leaves* petioled, stipulate, digitate, opposite. Leaflets 5 to 7, lanceolate. *Flowers,* male, in small loose racemes at the ends of the stem and branches ; female, axillary, solitary, very small.

Time for collecting.—When in flower.

Preparation. — Tincture, corresponding in alcoholic strength with proof spirit. Process I.

Proper forms for dispensing.—*ϕ and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

Average loss of moisture, 63 per cent.

CANNABIS INDICA.

Contractions.—Cann-I. Can-i.

Nat. ord., CANNABINACEÆ.

Indian Hemp. Indian names, *Gunjah, Bhang;* Arabian, *Hashish.*

There seems to be no botanical difference between *C. Indica* and *C. sativa,* but the physiological action of the latter has been materially modified by cultivation and growth in a mild climate.

Part employed.—The substance used in the earlier provings of this drug was the resin of the Indian Hemp, prepared from the imported Gunjah, or dried flowering tops of the female Hemp, and often called in the shops Cannabin. An alcoholic extract is now prepared which bears the following

Characters and Tests.—A soft extract, intensely green and possessing in a high degree the peculiar odour of hemp. Soluble in rectified spirit and in olive oil.

Preparation.—Tincture, by solution of the extract in rectified spirit, 1 in 10.

Proper forms for dispensing.—*ϕ and upwards, Tincture, Pilules, or Globules.* 1^x *and upwards, Tincture-trituration.*

CANTHARIS.

Contractions.—Canth. Cth.

Cantharis vesicatoria, *De Geer.* *Class,* INSECTA; Order, COLEOPTERA; *Sec.,* HETEROMERA; *Fam.,* CANTHARIDÆ.

Synonyms.—Melöe vesicatorius *(Linn.),* Lytta vesicatoria *(Fabr.)*

Spanish Fly. German, *Kantharide;* French, *Cantharide;* Italian, *Cantarelle;* Spanish, *Cantharidas.*

Parts employed.—The entire beetle, dried, as imported, chiefly from Hungary.

Characters and Tests.—From 8 to 10 lines long, furnished with two wing-covers of a shining metallic-green colour, under which are two membranous transparent wings; odour strong and disagreeable. Free from mites.

Preparation.—Tincture, using proof spirit. Process I.

Proper forms for dispensing.—*ϕ and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

CAPSICUM.

Contractions.—Caps. Cap.

Capsicum annuum, *Linn.* *Nat. ord.,* SOLANACEÆ.

Synonym.—Piper Indicum vulgatissimum.

Fig.—Flora Hom., pl. 16.

Capsicum. German, *Spanischer Pfeffer;* French, *Poivre d'Inde, Poivre d'Espagne;* Italian, *Pepe di Guinea, Peperone;* Spanish, *Pimentero annua, Pimiento da Indias.*

Habitat.—East and West Indies and South America.

Parts employed.—The dry capsules and seeds, as imported.

Characters.—Flattened pods from 2 to 3 inches long, more or less shrivelled, smooth, shining, varying in colour from a light reddish-brown to a dark brown; usually with the calyx and stalk attached; with 2 or 3 cells containing dry, loose pulp, and numerous flat kidney-shaped, buff-coloured seeds.

N.B.—Care must be taken to avoid confusion of the above with the smaller pods sold under the same name, and as *Chillies*—a name applied to two or three species.

Preparation.—Tincture, using rectified spirit. Process I.

Proper forms for dispensing.—*ϕ and upwards, Tincture, Pilules or Globules.*

CARBO ANIMALIS.

Contractions.—Carb-a. Cb-a.

Animal Charcoal. German, *Thierische Kohle;* French, *Charbon Animal;* Italian, *Carbone Animale;* Spanish, *Carbon Animal.*

The preparation used by Hahnemann in his provings, and which ought, therefore, to be preferred to all others, was made as follows :—

Place a thick piece of ox-hide on red-hot coals, and leave it there so long as it burns with a flame. As soon, however, as the flame ceases, lift off the red-hot mass, and extinguish it by pressing between two flat stones.

This will, of course, contain several substances besides carbon, which, however, cannot interfere with its action, seeing that one ox-hide is not likely to differ materially from another.

Preparation.—Trituration.

Proper forms for dispensing.—1^x *to* 3, *Trituration only.* 4 *and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

CARBO VEGETABILIS.

Contractions.—Carb-v. Cb-v.

Synonym.—Carbo Ligni.

Vegetable Charcoal. German, *Holzkohle;* French, *Charbon de bois;* Italian, *Carbone di legno;* Spanish, *Carbon de lena.*

Hahnemann assures us that well-prepared charcoal acts in the same manner, irrespective of the source from which it is made. He himself used that made from birch wood, while others who assisted him employed the charcoal of red beech.

Select a piece of charcoal, brittle, of a fine black colour, and retaining the form of the wood from which it has been prepared, and which, on being ignited, does not emit smoke or any unpleasant smell. That used in blow-pipe operations is most suitable.

Preparation.—Trituration.

Proper forms for dispensing.—1^x *to* 3, *Trituration only.* 4 *and upwards, Tincture, Tincture-trituration, Pilules or Globules.*

CASTOREUM.

Contractions.—Cast. Cas.

Castor Fiber, *Linn.* *Class,* MAMMALIA; *Order,* RODENTIA; *Fam.,* MURIDÆ; *Sub-fam.,* CASTORINA.

The Beaver. Castor. German, *Bibergeil;* French, *Castoreum;* Italian, *Castoro;* Spanish, *Castoreo.*

Part employed.—The secretion of the castor-sacs. Castor is imported from Russia and America; that usually found in this country comes from the Hudson's Bay territory.

Characters.—Follicles in pairs, about 3 inches long, fig-shaped, firm, and heavy, brown or greyish-black; containing a dry, resinous reddish-brown or brown highly odorous secretion, in great part soluble in rectified spirit, and in ether.

Preparation.—Tincture, using rectified spirit. Process III.

Proper forms for dispensing.—*ϕ and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

CAULOPHYLLUM.

Contractions.—Caul. Cph.

Caulophyllum thalictroides, *Mich.* *Nat. ord.,* BERBERIDACEÆ.

Synonym.—Leontice thalictroides *(Linn.).*

Fig.—R. Brown in Linnean Transact., 12, p. 145, t. 7.

Blue Cohosh. Squaw Root. German, *Löwenblatt;* French, *Leontice.*

Habitat.—Woods. Canada to N. Carolina and Kentucky.

Flowering time.—April.

Part employed.—The root.

Characters.—Glaucous when young. *Stem* simple, 1 to 2 feet high. *Leaflets* ovate, oblique, subcuneiform at base. *Panicle* small, racemose. *Flowers* greenish-yellow. *Seeds* large, deep blue when ripe. The roasted seeds have been used as a substitute for coffee. *Root* perennial, sweetish, somewhat aromatic, brown externally, yellow internally, hard, irregular, knotty, branched with many matted fibres.

Time for collecting.—Early in the season, when growth begins.

Preparation. — Tincture, corresponding in alcoholic strength with proof spirit. Process I.

N.B.—As the plant is not indigenous to this country, the tincture imported from North America must be used.

Proper forms for dispensing.—*φ and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

CAUSTICUM.

Contractions.—Caus. Cau.

German, *Aetzstoff.*

This is a preparation peculiar to Homœopathy, and hence must be prepared exactly according to Hahnemann's directions, which are as follows:—

"Take a piece of recently burnt lime, weighing about 2 pounds, immerse it for a minute in a vessel full of distilled water, and then lay it in a dry cup, where it soon becomes pulverized, giving out much heat and a peculiar odour, called the vapour of lime. Of this fine powder you take 2 ounces, and place it in the mortar which had been previously warmed, and then mix with a solution of 2 ounces of the Bi-sulphate of Potash in 2 ounces of boiling hot water, the Potash before being dissolved having been exposed to a red heat, melted, cooled again, and then pulverized. This thickish preparation is inserted into a small glass retort, to the open end of which the receiver, which ought to be dipped in water to half its height, is fastened by means of wet bladder. The liquid is distilled over by gradually approaching a coal fire to the retort, and until the preparation is perfectly dry. The liquid in the receiver is about 1 ounce and a half, as clear as water, and containing the Causticum in a concentrated form, which smells like the lye obtained from potash, and has an astringent and burning taste on the back part of the tongue. Its freezing point is below that of water; it promotes the putrefraction of animal substances which are placed in it; with the salts of Baryta it gives no trace of Sulphuric Acid, nor any trace of lime-earth with the Oxalate of Ammonia."

In order to preserve this solution, it is necessary to add 5 per cent. of rectified spirit.

Tests.—Odour peculiar, not purely ammoniacal. It yields a red precipitate with Nessler's solution.

Preparation.—Attenuations should be made with rectified spirit. What is called mother tincture, however, in this case is of unknown strength.

Proper forms for dispensing.—*ϕ, Solution only.* 1^x *and upwards, Tincture, Pilules, or Globules.*

CEDRON.

Contractions.—Cedr. Ced.

Simaba Cedron, *Planchon.* *Nat. ord.*, SIMARUBACEÆ.

Rattlesnake Beans.

Habitat.—New Granada and Central America.

Part employed.—The seed.

Characters.—Dried fruit light, of a yellowish ash-colour, flattish-ovate, with one edge convex, the other nearly straight, the convex outline terminating at each end in an obtuse point, of which that at the apex is most prominent; about 2 inches long, and 16 lines in its greatest breadth. Within it is the *seed*, loose and movable, about 1½ inch long, 10 lines broad, and ½ inch thick, convex on one side, flat or slightly concave on the other, and presenting an oval scar near one extremity of the flat surface. It is hard and compact, but may be readily cut with a knife; inodorus, but of a pure and intensely bitter taste, not unlike that of Quassia.

A description of the plant is given by Sir W. J. Hooker (*vide* Pharm. Journ., Jan. 1851, x., 344.)

Preparation.—Tincture, using rectified spirit. Process I.

Proper forms for dispensing.—*φ and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

CEPA. *Vide* ALLIUM CEPA, p. 88.

CHAMOMILLA.

Contractions.—Cham. Cha.

Matricaria chamomilla, *Linn.* *Nat. ord.*, COMPOSITÆ.

Synonyms.—Chamœmelum vulgare, Chamomilla nostras, Leucanthemum.

Fig.—Flora Hom., pl. 17.

Wild Chamomile, German Chamomile, Corn Fever-few. German, *Feld-Kamille, Mutter-Kraut;* French, *Camomille commun;* Italian, *Matricaria;* Spanish, *Matricaria.*

Habitat.—Most parts of Europe, in corn fields, waste grounds and roadsides.

Flowering time.—From May to August.

Parts employed.—The whole plant.

Characters.—An erect, branching annual; *leaves* twice or thrice pinnate, with short but very narrow linear segments. *Flower heads* rather large, on terminal peduncles; involucral bracts all nearly of the same length, with scarious edges; ray-florets white. *Receptacle* naked, almost perfectly cylindrical when fully developed, hollow. Very similar to the well-known *fetid Chamomile* (*Anthemis cotula*), but distinguished from it by having *no scales on the receptacle.*

Time for collecting.—When in flower.

Preparation. — Tincture, corresponding in alcoholic strength with proof spirit. Process I.

Proper forms for dispensing.—*ϕ and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

Average loss of moisture, 75 per cent.

CHELIDONIUM.

Contractions.—Chel. Chd.

Chelidonium majus, *Mill.* *Nat. ord.*, PAPAVERACEÆ.

Synonym.—Papaver corniculatum luteum.

Fig.—English Botany, i., 1581.

Common Celandine. German, *Schœlkraut, Goldwurz;* French, *Eclaire;* Italian, *Cirigogna;* Spanish, *Celidonia.*

Habitat.—In waste places, especially near towns and villages, all over Europe, America, and the corresponding parts of Asia.

Flowering time.—May and June.

Parts employed.—The entire fresh plant, including the root.

Characters.—About 2 feet high, slightly hairy, brittle, full of yellow fetid juice. *Leaves* pinnate, with about 5 decurrent segments which are broadly ovate, lobed, and crenated, sometimes jagged. *Flowers* in long-stalked umbels, yellow, rather small. *Sepals* glabrous. *Pod* long, somewhat turgid.

Time for collecting.—At the beginning of flowering.

Preparation. — Tincture, corresponding in alcoholic strength with dilute alcohol. Process I.

A trituration of the dried plant is suggested.

Proper forms for dispensing.—*ϕ and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

Average loss of moisture, 86 per cent.

CHINA.

Contractions.—Chin. Chi.

Cinchona Calisaya, *Wedd.* *Nat. ord.*, RUBIACEÆ.

Synonyms.—Cinchona flava. C. officinalis.

Fig.—Flora Hom., pl. 18. Bent. and Trim. Med. Pl., 141.

Peruvian Bark, Yellow Cinchona Bark. German, *Chinarinde;* French, *Quinquina;* Italian, *China-china;* Spanish, *Guina.*

Habitat.—Bolivia and Southern Peru.

Part employed.—The dried bark.

Characters.—In flat pieces, deprived of periderm, rarely in coated quills, from 6 to 18 inches long, 1 to 3 inches wide, 2 to 4 lines thick, compact and heavy; outer surface brown, marked with broad, shallow, irregular longitudinal depressions; inner surface tawny yellow, fibrous; transverse fracture shortly and finely fibrous. Powder cinnamon-brown, somewhat aromatic, persistently bitter.

Test.—Boil 100 grains of the bark, reduced to very fine powder, for a quarter of an hour in a fluid ounce of distilled water acidulated with ten minims of hydrochloric acid, and allow it to macerate for twenty-four hours. Transfer the whole to a small percolator, and after the fluid has ceased to drop add at intervals about an ounce and a half of similarly acidulated water, or until the fluid which passes through is free from colour. Add to the percolated fluid solution of subacetate of lead, until the whole of the colouring matter has been removed taking care that the fluid remains acid in reaction. Filter and wash with a little distilled water. To the filtrate add about thirty-five grains of caustic potash, or as much as will cause the precipitate which is at first formed to be nearly redissolved, and afterwards six fluid drachms of absolute ether. Then shake briskly, and, having removed the ether, repeat the process twice with three fluid drachms of ether, or until a drop of the ether employed leaves on evaporation scarcely any perceptible residue. Lastly, evaporate the mixed ethereal solutions in a capsule. The residue, which consists of nearly pure Quinia, when dry, should weigh not less than 2 grains, and should be readily soluble in diluted sulphuric acid.

Preparation.—Tincture, using 20 O. P. spirit. Process I.

Proper forms for dispensing—*ϕ and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

CHININUM MURIATICUM.

Contractions.—Chin.-mur. Ch.-m.

Synonym.—Quiniæ Hydrochloras.

Present name.—Quinine or Quinia Hydrochloride. $C_{20}H_{24}N_2O_2HCl.2H_2O$.

Hydrochlorate of Quinine. German, *Salzsaures Chinin;* French, *Muriate de quinine;* Italian, *Muriato di chinina.*

Prepared by mixing hot solutions of Chloride of Barium and Sulphate of Quinine, evaporating to one half, filtering while still hot, to separate the Sulphate of Barium, and setting aside to crystallize. Or it may be obtained by dissolving pure Quinia in slight excess of warm dilute Hydrochloric Acid and crystallizing the salt.

Characters and Tests.—White silky needles, soluble in about 50 parts of water without the aid of any acid, and the solution, when treated first with solution of Chlorine and afterwards with Ammonia, becomes of a splendid emerald green colour. It gives with Nitrate of Silver a white precipitate soluble in Ammonia, but insoluble in Nitric Acid. No precipitate is formed on the addition of a small quantity of dilute Sulphuric Acid, and only a faint one, if any, when Chloride of Barium is added. Dissolves in pure Sulphuric Acid with a feeble yellowish tint, and undergoes no further change of colour when gently warmed. Ten grains with a few drops of diluted Hydrochloric Acid and half a fluid ounce of water form a perfect solution, from which Ammonia throws down a white precipitate. This redissolves on agitating the whole with half a fluid ounce of ether, without the production of any crystalline matter floating on the lower of the two strata, into which the agitated fluid separates on rest.

Preparations.—Solution in 20 O.P. spirit for 1^x, after which rectified spirit may be used. Trituration.

Proper forms for dispensing.—1^x *and upwards, Tincture, Tincture-trituration, Pilules, or Globules; or* 1^x *to* 3, *Trituration.*

CHININUM SULPHURICUM.

Contractions.—Chin-s. Ch-s.

Synonym.—Quiniæ Sulphas.

Present name.—Quinine or Quinia Sulphate. $(C_{20}H_{24}N_2O_2)_2H_2SO_4.7H_2O$.

Sulphate of Quinine. German, *Schwefelsaures Chinin;* French, *Sulfate de quinine;* Italian, *Solfato di chinina.*

The sulphate of an alkaloid obtained from *Cinchona Calisaya* (Wedd.) and other species of Peruvian bark, prepared in large quantities by the manufacturing chemists. Its purity should be ascertained by the following .

Characters and Tests.—Filiform silky snow-white crystals, of a pure intensely bitter taste, sparingly soluble in water, yet imparting to it a peculiar bluish tint. The solution gives with Chloride of Barium a white precipitate insoluble in Nitric Acid, and when treated first with solution of Chlorine and afterwards with Ammonia, it becomes of a splendid emerald-green colour. Dissolves in pure Sulphuric Acid with a feeble yellowish tint, and undergoes no further change of colour when gently warmed. 10 grains with 10 minims of diluted Sulphuric Acid and half a fluid ounce of water form a perfect solution, from which Ammonia throws down a white precipitate. This re-dissolves on agitating the whole with half a fluid ounce of ether, without the production of any crystalline matter floating on the lower of the two strata, into which the agitated fluid separates on rest. 25 grains of the salt should lose 3·6 grains of water by drying at 212°.

Preparations.—Trituration for 1^x, unless sulphuric acid is added in excess. An aqueous solution of 1 in 15 can be made by adding a few drops of dilute sulphuric acid. The salt is sufficiently soluble in 20 O.P. spirit to allow of a 1 centesimal solution being made, and from this the higher attenuations should be prepared with rectified spirit.

Proper forms for dispensing.—*Below* 1, *Trituration or Solution only.* 1 *and upwards, Tincture, Tincture-trituration, Pilules or Globules.*

CICUTA.

Contractions.—Cicut. Cic.

Cicuta virosa, *Linn.* *Nat. ord.*, UMBELLIFERÆ.

Synonyms. — Cicuta aquatica, Sium majus angustifolium.

Fig.—Flora Hom., pl. 20.

Cowbane. Long-leaved Water hemlock. German, *Wasserschierling;* French, *Cigue vireuse, Cicutaire vénéneuse;* Italian, *Cicuta virosa.*

Habitat.—In wet ditches in Northern and Central Europe, Russian Asia, and North America. Very local in Britain.

Flowering Time.—Summer.

Part employed.—The fresh root.

Characters.—*Root* thick, white, fleshy, elongated, full of hairs, and hollow, containing a yellow juice, with a strong disagreeable odour, and an acrid caustic taste. *Stem* hollow, somewhat branched, attaining 3 or 4 feet. *Leaves* twice or thrice pinnate or ternate, with narrow-lanceolate, acute segments, 1 to 1¼ inch long, bordered with a few unequal, acute teeth. *General umbels* of from 10 to 15 or even more rays. No general involucre, or only one or two small bracts. *Partial involucres* of many subulate bracts, not quite so long as the pedicels. *Calyx teeth* prominent above the ovary. *Petals* white, obcordate. *Fruit* short, laterally compressed, each carpel nearly globular, with 5 scarcely prominent broad flat ribs, and single vittas under the furrows.

Time for collecting.—At the beginning of flowering.

N.B.—It should not be collected without the entire plant, since the leaves, stem, &c., are necessary for accurate identification.

Preparation.—Tincture, corresponding in alcoholic strength with proof spirit. Process I.

Proper forms for dispensing.—ϕ *and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

CIMICIFUGA. *Vide* ACTÆA.

CINA.

Contractions.—Cin.

Artemisia contra. *Nat. ord.*, COMPOSITÆ.

Synonyms.—Artemisia santonica, Semen contra, Semen cinæ.

Fig.—Flora Hom., pl. 19.

Wormseed. Tartarian Southernwood. German, *Zittersame, Würmsame;* French, *Barbotine, Graine de Zedoaria;* Italian, *Seme-sanuto.*

Habitat.—Several species of Artemisia *(Linn.)* which have been used in the provings under the above names were obtained from Asia Minor, the Levant, Africa, and Persia.

The Semen contra now generally used in this country is an undetermined species imported from Russia.

Parts employed.—Unexpanded flower-heads as imported.

Characters.—Flower-heads rather more than a line in length, and nearly half a line in breadth, fusiform, blunt at each end, pale greenish-brown, smooth; resembling seeds in appearance, but consisting of imbricated involucral scales, with a green midrib, enclosing 4 or 5 tubular flowers; odour strong, taste bitter, camphoraceous. Flower-heads not round or hairy.

Preparations.—Tincture, using rectified spirit. Process I. Trituration.

Proper forms for dispensing.—*ϕ and upwards, Tincture, Tincture-trituration, Pilules, or Globules; or* 1^x *to* 3, *Trituration.*

CINNABAR. *Vide* MERCURIUS.

CISTUS.

Contractions.—Cist. Cis.

Cistus Canadensis, *Willd. Nat. ord.*, CISTACEÆ.

Synonyms.—Helianthemum Canadense (*Mich.*). H. corymbosum, H. rosmarifolium, Lechea major.

Fig.—Sweet Cist., pl. 21.

Rock-rose, Frostwort. German, *Canadisches Cistenröschen;* French, *Ciste Canade;* Italian, *Cistro;* Spanish, *Jara.*

Habitat.—In dry, sandy soils; Canada to Florida.

Flowering time.—June to September; April in the Southern States.

Parts employed.—The entire fresh plant.

Characters.—*Stem* at first simple. *Flowers*, the primary or terminal, large and petaliferous, few or solitary, on peduncles scarcely larger than the flower; the secondary, axillary, very small, nearly sessile, solitary, or somewhat clustered on leafy branches. *Leaves* oblong, or somewhat lanceolate.

Time for collecting.—When in flower and seed.

Preparation.—Tincture, corresponding in alcoholic strength with proof spirit, prepared in and imported from North America.

Proper forms for dispensing.—*ϕ and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

CLEMATIS.

Contractions.—Clem. Cle.

Clematis erecta, *Linn.* *Nat. ord.*, RANUNCULACEÆ.

Synonym.—Flammula Jovis.

Fig.—Flora Hom., pl. 21.

Upright Virgin's Bower. German, *Brennende Waldrebe;* French, *Clematite droite;* Italian, *Clematite;* Spanish, *Clematide.*

Habitat.—South of France, Spain, Switzerland, &c.

Flowering time.—July and August.

Parts employed.—Leaves and stems.

Characters.—*Stem* 3 feet high, leafy, striated, herbaceous, greenish or reddish. *Leaves* large, opposite; leaflets 5 to 9, pubescent underneath, petioled. *Flowers* white, in upright stiff terminal umbels. *Peduncles* several times ternate. *Seeds* dark brown, smooth, orbicular, much compressed; tails long, yellowish, plumose.

Time for collecting.—When beginning to flower.

Preparation.—Tincture, using proof spirit. Process I.

Proper forms for dispensing.—ϕ *and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

COCCULUS.

Contractions.—Cocc. Coc.

Anamirta Cocculus, *Willd.* *Nat. ord.*, MENISPERMACEÆ.

Synonyms.—Anamirta paniculata, Cocculus Indicus, C. suberosus, Menispermum Cocculus.

Fig.—Flora Hom., pl. 22.

Cocculus Indicus. German, *Kokkelskörner, Fischkörner;* French, *Coque du Levant.*

Habitat.—Coast of Malabar and the Indian Archipelago.

Parts employed.—The berries.

Characters.—Inodorous, roundish, from a light to a dark greyish-brown, size of a large pea, wrinkled, resembling the bay berry. The bitter, yellowish kernel does not entirely fill the cavity in the berry, by which character it may be distinguished from bay berries.

Preparation.—Tincture, using rectified spirit. Process I.

Proper forms for dispensing.—*ϕ and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

COCCUS CACTI.

Contractions.—Coc-c. Ccs.

Coccus Cacti, *Linn.* *Class,* INSECTA; *Order,* HOMOPTERA; *Section,* MONOMERA; *Family,* COCCIDÆ.

Cochineal. German, *Nopal-schildlaus;* French, *Cochenille;* Italian, *Cocciniglia;* Spanish, *Cochinilla.*

Habitat.—Mexico and Teneriffe.

Parts employed.—The entire female insect, dried, as imported.

Characters.—Ovate, plano-convex, about two lines long, wrinkled, black or greyish-white; yields, when crushed, a puce-coloured powder. The greyish-white specimens quickly become black when gently warmed.

Preparations.—Tincture, 1 in 20, using proof spirit. Process I. Trituration.

Proper forms for dispensing.—1^x *to 3, Trituration; or ϕ and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

COFFEA.

Contractions.—Coff. Cof.

Coffea Arabica, *Linn.* *Nat. ord.*, RUBIACEÆ.

Synonym.—Jasminum arabicum.

Fig.—Flora Hom., pl. 22.

Coffee. German, *Kaffeebaum;* French, *Caffayer;* Italian, *Caffé;* Spanish, *Café.*

Habitat.—Arabia Felix and Ethiopia. Successfully cultivated in tropical America and parts of Europe.

Part employed.—The seed, using the best Mocha coffee of the shops, unroasted.

Characters and Tests.—Pale green or straw coloured, oval, plano-convex seeds, having a characteristic odour and taste, hard, and readily sinking in water.

Preparation.—Tincture, using rectified spirit. Process I.

Proper forms for dispensing.—*φ and upwards, Tincture, Tincture-trituration, Pilules or Globules.*

COLCHICUM.

Contractions.—Colch. Cch.

Colchicum Autumnale, *Linn.* *Nat. ord.*, MELANTHACEÆ.

Synonyms.—C. anglicum, C. commune.

Fig.—Flora Hom., pl. 24.

Meadow Saffron, Tuber-root, Naked Lady, Upstart. German, *Herbstzeitlose, Lichtblume;* French, *Colchique,* *Safran des près;* Italian, *Colchico, Giglio Matto;* Spanish, *Colchico.*

Habitat.—Moist meadows and pastures over the greater part of Europe; abundant in some parts of England and Ireland.

Flowering time.—Autumn.

Part employed.—The fresh corm or bulb.

Characters.—About the size of a chestnut, flattened where it has an undeveloped bud; furnished with an outer brown and an inner yellow coat; internally white, solid, and fleshy, yielding when cut a milky, acrid, and bitter juice.

Time for collecting.—In the spring, when the leaves are withered, and about the end of June.

Preparation. — Tincture, corresponding in alcoholic strength with proof spirit. Process II.

Proper forms for dispensing.—ϕ *and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

Average loss of moisture, 69 per cent.

COLLINSONIA.

Contractions.—Collin. Csn.

Collinsonia Canadensis, *Willd.* *Nat. ord.*, LABIATÆ.

Synonyms.—Collinsonia scrotina, C. decussata.

Fig.—Rafn. Med., 23.

Stone-root. Common Horse-weed, Rich-weed, Horse-balm.

Habitat.—North America, in moist woods from New England to Michigan and southward.

Flowering time.—July to September.

Part employed.—The root.

Characters.—Stem smooth, simple, round, straight, 1 to 3 feet high; *leaves* serrate, with broad teeth, pointed, long petioled, only two or three pairs, these cordate at base, broadly ovate, acuminate, surface smooth, with small veins. *Flowers* opposite, on long peduncles, with short subulate bracteoles, forming a terminal leafless panicle with branched racemes. *Corolla* two-thirds of an inch long, yellow (exhaling a strong odour like lemons), tubular at base, spreading above in two lips, upper lip very short and notched, lower lip lobed on the sides and fringed around. *Stamens* two, long, protruding; filaments filiform, anther oval, style protruding. *Seeds* often abortive, only one ripening. *Root* perennial, knotty, depressed, very hard, with many slender fibres.

Time for collecting.—In early spring or late autumn.

Preparations.—Tincture, corresponding in alcoholic strength with proof spirit. Process II. Trituration.

Proper forms for dispensing.—*ϕ and upwards, Tincture, Tincture-trituration, Pilules, or Globules; or,* 1^x *to* 3, *Trituration.*

COLOCYNTH.

Contractions.—Coloc. Col.

Citrullus Colocynthis, *Schrad. Nat. ord.*, CUCURBITACEÆ.

Synonyms.—Cucumis colocynthis, Colocynthis vulgaris.

Fig.—Flora Hom., pl. 25.

Colocynth, Bitter Cucumber, or Bitter Apple. German, *Coloquinte;* French, *Coloquinte;* Italian, *Coloquintida;* Spanish, *Coloquintida.*

Habitat.—Japan, Cape of Good Hope, Egypt, Turkey, and is cultivated in Spain.

Flowering time.—May to August.

Part employed.—The fruit (pepo) as imported, deprived of the rind and seeds.

Characters.—Light, spongy, white, or yellowish-white in colour, intensely bitter in taste.

Preparation.—Tincture, using proof spirit. Process I.

Proper forms for dispensing.—ϕ *and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

CONIUM.

Contraction.—Con.

Conium maculatum, *Linn.* *Nat. ord.*, UMBELLIFERÆ.

Synonyms.—Cicuta vulgaris, Conium majus, Coriandrum cicuta.

Fig.—Flora Hom., pl. 26.

Common or Spotted Hemlock, Kex, Herb Bennet. German, *Gefleckter Schierling;* French, *Grande Cigué;* Italian, *Cicuta maggiore ;* Spanish, *Ceguda.*

Habitat.—Widely spread over Europe. On the borders of streams, hedges, and fields.

Flowering time.—Summer.

Parts employed.—The entire fresh herb.

Characters.—An erect, branching annual or biennial plant distinguished from allied species by the following characters: *Stem* smooth, spotted with purplish spots. *Leaves*, lower ones smooth, dark, glossy green. *Flowers* white, in terminal umbels, usually of 10 to 15 rays. *General involucre* consisting of 3 to 7 leaflets, *partial involucre* 3 leaflets. *Fruit* with undulated, crenated edges. The plant when bruised has a disagreeable odour like that of mice.

Time for collecting.—When both flower and fruit are present.

Preparation. — Tincture, corresponding in alcoholic strength with proof spirit. Process I.

Proper forms for dispensing.—φ *and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

Average loss of moisture, 75 per cent.

COPAIBA.

Contractions.—Copaib. Cop.

Copaifera multijuga, *Hayne.* *Nat. ord.*, LEGUMINOSÆ.

Synonym.—C. officinalis.

Fig.—Hayne, x. 12—23.

Balsam of Copaiva. German, *Copaiva-Balsam;* French, *Baume de Copahu;* Italian, *Balsamo di Copaiba;* Spanish, *Balsamo de Copayva.*

Habitat.—America, the Brazils, &c. Obtained chiefly from the valley of the Amazon.

Part employed.—The oleo-resin.

Characters and Tests.—About the consistence of olive oil, light yellow, transparent, with a peculiar odour, and an acrid aromatic taste. Perfectly soluble in an equal volume of Benzol. Does not become gelatinous after having been heated to 270°. Is not fluorescent.

Preparation. — Solution in absolute alcohol for 1^x, using rectified spirit for 1 and upwards.

Proper forms for dispensing.—1^x *and upwards, Tincture, Pilules, or Globules.*

CORALLIUM RUBRUM.

Contractions.—Corr.-r. Cor.

Corallium rubrum, *Lamarck. Class,* ZOOPHYTA; *Order,* ACTINOIDA; *Sub-order,* ALCYONARIA; *Fam.,* GORGONIADÆ.

Synonym.—Isis nobilis (*Linn*).

Red Coral. German, *Rothe Koralle*; French, *Corail rouge.*

This is the calcareous structure made by the coral Zoophyte, and which from its beauty is manufactured into ornaments of various kinds. Select the small branched pieces striated externally, and often covered with a white calcareous substance. Wash them with distilled water.

Preparation.—Trituration.

Proper forms for dispensing.—1^x *to* 3, *Trituration only.* 4 *and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

CROCUS.

Contractions.—Croc. Cro.

Crocus sativus, *Linn.* *Nat. ord.*, IRIDACEÆ.

Synonyms.—Crocus verus, Crocus autumnalis.

Fig.—Flora Hom., pl. 27.

Common Saffron Crocus. German, *Safran;* French, *Safran;* Italian, *Zafferano;* Spanish, *Azafran.*

Habitat.—Asia Minor. Imported from Spain, France, and Italy.

Flowering time.—September and October.

Parts employed.—The dried stigmata, as imported.

Characters.—Thread-like styles, each terminated by 3 long orange-brown stigmas, broadest at the summit. Has a powerful aromatic odour. Rubbed on the wet finger, it leaves an intense orange-yellow stain; pressed between folds of blotting-paper, it leaves no oily stain.

Preparation.—Tincture, using rectified spirit.

Proper forms for dispensing.—*ϕ and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

CROTALUS.

Contractions.—Crotal. Crt.

Class, Reptilia ; *Section*, Squamata ; *Order*, Ophidia; *Sub-order*, Viperinæ ; *Family*, Crotalidæ ; *Genus*, Crotalus ; *Species*, Horridus, Durissus. (*Baird and Girard.*)

Synonyms.—Uropsophus, Crotalophorus, Caudisonia.

Rattlesnake. German, *Klapperschlange ;* French, *Serpent à sonnettes.*

Habitat.—America.

Part employed.—The venom.

Characters of Venom.—Pure.—A clear greenish orange, viscid fluid ; sp. gr. about 1·035 : of acid reaction ; *ϕ solution* clear, viscid, pale yellow. Both are miscible in all proportions with water ; but alcohol causes a heavy flocculent precipitate, containing the active principle—*Crotaline.*

Characters of Precipitate.—A pale yellow, amorphous, albuminous powder, neutral, soluble in water, insoluble in alcohol.

Characters of Genus.—4 to 6 feet long, gradually swelling towards the middle, where it is 5 to 8 inches in circumference ; back and sides covered with keeled scales ; belly with unkeeled plates, which are always single under the tail. Head broad and triangular, with a large pit on each side below and in front of the eye ; fangs half to one inch long ; tail terminating in a rattle. Ground colour of back varies from yellowish-tawny to blackish-brown ; of belly, from whitish yellow to brownish-grey. A central and two lateral rows of dark spots along the back, confluent on posterior half of body. Tail generally black.

Collection.—The venom of this deadly serpent is procured by pressing the gland whilst the serpent is either pinioned in a frame or narcotized by Chloroform, and, as the venom drops from the fang, receiving it in a small graduated phial and immediately preserving it in pure glycerine—1 part venom and 9 of glycerine. This is called ϕ, as the strongest officinal preparation. (*Vide* p. 35.) Glycerine is the best menstruum for preserving it; strong alcohol precipitates its active principle, and being an animal substance, it will not keep in trituration.

Preparation. — For the 1^x attenuation, we use pure glycerine; for the first 5 centesimal, a mixture of 1 part glycerine and 3 parts proof spirit; and for the 6th and upwards, spirit 20 O.P.

Proper forms for dispensing.—*Below* 6, *Tincture only.* 6 *and upwards, Tincture, Pilules, or Globules.*

CROTON.

Contractions.—Crot. Ctn.

Croton Tiglium, *Linn.* *Nat ord.*, EUPHORBIACEÆ.

Fig.—Nees von E., 138.

Croton Tree. Croton Oil. German, *Crotonöl;* French, *Huile de Croton.*

Habitat.—Hindostan, Ceylon, the Molucca Isles, and other parts of Asia.

Parts employed.—The seeds: also the oil expressed from them.

Characters.—*Seeds*, ovate-oblong, somewhat angular, containing within a pale brown skin, a smooth, thin, dull green shell, and a white inodorous kernel, which on chewing is at first mild and oleaginous, but soon becomes acrid and burning.

The *oil* is slightly viscid, of a brownish-yellow colour; taste acrid, odour faintly nauseous.

Preparations. — 1. Tincture of the seeds, 1 in 20, using absolute alcohol. 2. Solution of the oil in absolute alcohol, 1 in 20, using absolute alcohol for 1, and rectified spirit for all above.

N.B.—The 1 in 20 solution of this oil will be at least double the strength of the mother tincture of the seeds.

Proper forms for dispensing. —ϕ *and upwards, or* Oleum Crotonis 1 *in* 20 *and upwards, Tincture, Pilules, or Globules.* 1 *and upwards, Tincture-trituration.*

CUPRUM ACETICUM.

Contractions.—Cupr-a. Cu-a.

Synonym.—Cupri Acetas.

Present name. — Normal Cupric Acetate. $Cu(C_2H_3O_2)_2.H_2O$.

Acetate of Copper. German, *Essigsaures Kupfer;* French, *Acetate de cuivre;* Italian, *Acetato di rame.*

Obtained by dissolving *Verdigris* in hot diluted Acetic Acid, evaporating gently and allowing it to crystallize.

Characters and Tests.—Dark green crystals, which gradually attract moisture if exposed to the air; entirely soluble in about 14 parts of cold water, yielding a deep greenish-blue solution, which becomes quite blue when diluted, and reddens litmus. The crystals blacken when heated on a knife or a slip of glass, and emit the odour of vinegar. The blue solution gives a black precipitate with Sulphuretted Hydrogen, a bulky chocolate-brown precipitate with yellow Prussiate of Potash, and a pale-blue precipitate with Ammonia, entirely re-dissolved into a deep blue solution by an excess of the Ammonia.

Preparation.—Solution in distilled water, 1 in 20.

The 1 attenuation is made with distilled water to which 5 per cent. of rectified spirit has been added; 3^x with dilute alcohol, 2 with 20 O.P. spirit, 5^x and upwards with rectified spirit.

N.B.—Triturations of this very soon spoil.

Proper forms for dispensing.—*Below* 3^x, *Solution only. 2 and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

CUPRUM ARSENICOSUM.

Contractions.—Cupr.-ars. C-ar.

Present name.—Hydric-cupric Arsenite. $CuHAsO_3$.

Arsenite of Copper.

This is the well-known *Scheele's green*, and may be obtained by mixing solutions of Arsenite of Potash and Sulphate of Copper, and collecting the green precipitate, washing carefully and drying it.

Characters and Tests.—A bright green powder, insoluble in water, but soluble in Hydrochloric Acid, forming a green solution. The powder when heated in a dry tube evolves Arsenious Acid, which is deposited on the cool part of the tube as a crystalline powder, consisting of minute, brilliant octahedral crystals. If ten grains be placed on a filter, and repeatedly washed with two fluid drachms of distilled water, the filtrate will give no precipitate on the addition of Chloride of Barium. It is a very powerful poison.

Preparation.—Trituration.

Proper forms for dispensing.—1^x *to* 3, *Trituration only.* 4 *and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

CUPRUM METALLICUM.

Contractions.—Cupr. Cup.

Copper. Cu. German, *Kupfer;* French, *Cuivre;* Italian, *Rame;* Spanish, *Cobre.*

Obtained by decomposing a solution of Sulphate of Copper by means of polished iron rods, upon which it is deposited in fine powder. Collect the metallic powder in a stoppered bottle and wash it repeatedly in distilled water, then pour over it a solution of Hyposulphite of Soda, and after shaking it well for ten minutes, throw it on a filter, wash it thoroughly with distilled water and dry it between folds of filtering paper without heat.

Characters and Tests.—A fine dark reddish-brown powder which blackens when heated with free access of air, and if introduced into a Bunsen flame communicates to it a green colour. Soluble in diluted Nitric Acid with evolution of a colourless gas, yielding a greenish-blue solution which gives a bulky brown precipitate with yellow Prussiate of Potash. On the addition to the solution of an excess of Ammonia, a clear violet-blue liquid will be produced, without sediment, or with scarcely a trace.

Preparation.—Trituration.

Proper forms for dispensing.—1^x *to* 3, *Trituration only.* 4 *and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

CUPRUM SULPHURICUM.

Contractions.—Cupr.-s. C-su.

Present name.—Cupric Sulphate. $CuSO_4.5H_2O$.

Sulphate of Copper. Blue Vitriol. German, *Schwefel-*

saures Kupfer; French, *Sulfate de cuivre;* Italian, *Solfato di rame;* Spanish, *Sulfato de cobre.*

May be obtained by boiling copper with sulphuric acid diluted with half its bulk of distilled water and purifying the soluble product by repeated crystallisation.

Characters and Tests.—A blue crystalline salt, in oblique prisms, soluble in water, forming a pale blue solution which strongly reddens litmus. The aqueous solution gives with Chloride of Barium a white precipitate insoluble in Hydrochloric Acid, and a bulky maroon-red precipitate with yellow Prussiate of Potash. If an aqueous solution of the salt be mixed with twice its volume of solution of Chlorine, and solution of Ammonia be added, the precipitate formed by the first addition of the Ammonia will be dissolved by a further and sufficient addition of the alkali, and a violet blue solution will be produced, leaving nothing undissolved.

Preparation.—Solution in distilled water for 1^x; distilled water to which 5 per cent. of rectified spirit has been added for 1; dilute alcohol for 3^x; 20 O.P. spirit for 2; and rectified spirit for 5^x and upwards.

Proper forms for dispensing.—1^x to 3^x, *Solution only.* 2 *and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

CURARE.

Contractions.—Cura. Woo.

Synonyms.—Woorali, Woorara, Urari, Ourari.

The arrow poison used by the savage tribes of South America.

Its composition is unknown, but it is evidently very complex. It has been supposed to contain some animal poison (probably snake poison) in addition to various vegetable poisons, especially those of the *Strychnos* order *(Loganiceæ)* or the *Euphorbiaceæ.* An alkaloid has been obtained from it, which possesses its poisonous properties in a high degree.

Characters.—It has a resinous appearance and blackish-brown colour and somewhat resembles liquorice. It is imported in little clay pots or calabashes. Partially soluble in water and alcohol, forming with proof spirit a red solution with an intensely bitter taste. The insoluble part is not active. A drop of the aqueous solution when stirred with a drop of pure Nitric Acid on a porcelain surface exhibits a transient purple colour. If a drop of the same solution be placed on a porcelain surface and stirred with a drop of strong Sulphuric Acid, and near to it a small crystal of Bichromate of Potash, also moistened with the same acid, and after waiting a minute or so for the chromate to fairly tinge the acid, the latter be then drawn by a glass rod over the Curare spot, the same violet colour is produced as with Strychnia, but it is much more persistent.

Preparation.—Tincture, 1 in 20, using proof spirit. Process III.

Proper forms for dispensing.—*ϕ and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

CYCLAMEN.

Contractions.—Cycl. Cyc.

Cyclamen europæum, *Linn.* *Nat. ord.*, PRIMULACEÆ.

Synonyms.—C. hederæfolium, C. vernum, C. neopolitanum.

Fig.—Flora Hom., pl. 28.

Sowbread. German, *Erdscheibe, Saubrod;* French, *Cyclamé, Pain de pourceau;* Italian, *Pan porcino;* Spanish, *Mazana de puerco.*

Habitat.—Southern Europe and Western Asia. Cultivated in England and almost naturalized in some places in the south and east of England.

Flowering time.—Autumn.

Part employed.—The fresh tuber.

Characters.—*Root-stock* globular, tuberous, flattened, brown without and whitish within. *Leaves* all radical, on long stalks, heart-shaped, more or less angular and toothed; often purple underneath. *Flowers* drooping, on long petioles, purplish, sweet-scented, corolla spiral over the fruit. As the flowers die the stalk rolls up and carries the capsular berry down to the surface of the earth.

Time for collecting.—Before and after flowering.

Preparation. — Tincture, corresponding in alcoholic strength with proof spirit. Process II.

Proper forms for dispensing.—*ϕ and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

Average loss of moisture, 75 per cent.

DAPHNE.

Contractions.—Daph. Dph.

Daphne Indica, *Linn.* *Nat. ord.*, THYMELACEÆ.

Synonyms.—Daphne odora, D. Lagetto.

Fig.—Hooker, Bot. Beechy, pl. 15.

Sweet-scented Spurge-Laurel. German, *Lorbeerblätteriger Spitzenbast;* French, *Lauréole de Chine.*

Habitat.—The West Indies and China.

Part employed.—The bark of the branches.

Characters.—A moderately-sized branching shrub. *Leaves* alternate, ovato-cordate, glabrous. *Flowers* white, richly scented, in terminal bunches of 10 to 15, almost sessile flowers on a common peduncle, furnished with several bracts at its base.

Preparation. — Tincture, using rectified spirit. Process I.

Proper forms for dispensing.—*ϕ and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

DIGITALIS.

Contraction.—Dig.

Digitalis purpurea, *Linn. Nat. ord.,* SCROPHULARIACEÆ.

Synonym.—D. speciosa.

Fig.—Flora Hom., pl. 29.

Purple Foxglove. German, *Fingerhut Schwulstkraut;* French, *Gantes Nôtre Dame Gantelée;* Italian, *Digitello;* Spanish, *Dedalera.*

Habitat.—Western and Central Europe; many parts of Great Britain.

Flowering time.—Spring and summer.

Parts employed.—Leaves of two-year-old plants.

Characters. — *Leaves* ovate-lanceolate, shortly petiolate, rugose, downy, paler on the under surface, crenate. *Calyx* of 5 unequal sepals or segments, 4 of which are broad and leafy, the 5th upper one much narrower and more pointed. *Corolla* tubular, contracted above the base, then much inflated, with 4 short lobes, the lowest about twice the length of the others and hairy inside. Inside of the corolla beautifully spotted.

Time for collecting.—Spring, when about two-thirds of the flowers are expanded.

Preparation. — Tincture, corresponding in alcoholic strength with dilute alcohol. Process I.

Proper forms for dispensing.—ϕ *and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

Average loss of moisture, 84 per cent.

DIOSCOREA.

Contractions.—Diosc. Dio.

Dioscorea villosa, *Linn.* *Nat ord.*, DIOSCOREACEÆ.

Synonyms.—D. paniculata, D. quinata.

Fig.—Rumpf, Am., v. 162.

Hairy Yam. Colic Root.

Habitat.—America; found in the thickets from New England to Wisconsin, and in the Southern States.

Flowering time.—June.

Part employed.—The root.

Characters.—*Leaves* alternate, cordate, acuminate, nine-ribbed, sub-pubescent. *Root* long, branched, crooked, woody, white internally, light brown externally, and wrinkled longitudinally with many long tough fibres, inodorous, and with a pleasantly bitter, sub-mucilaginous taste.

Time for collecting.—Before flowering, and when the stem dies down in autumn.

Preparations. — Tincture, corresponding in alcoholic strength with proof spirit. Triturations of the resinoid known as *Dioscorein.*

Proper forms for dispensing.—ϕ *and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

Dioscorein.—1^x to 3, *Trituration.*

DROSERA.

Contractions.—Dros. Dro.

Drosera rotundifolia, *Linn.* *Nat. ord.*, DROSERACEÆ.

Synonyms. — Rosella rotundifolia. Ros solis. Drosera capillaris.

Fig.—Flora Hom., pl. 30.

Round-leaved Sundew. Red-rot. Moor-grass. German, *Sonnenthau* ; French, *Rosée de soleil* : Italian, *Rugiada del sole* ; Spanish, *Rociada.*

Habitat.—In bogs and wet heathy ground throughout Central and Northern Europe and Great Britain.

Flowering time.—Summer and early autumn.

Parts employed.—The entire fresh plant.

Characters.—*Root-stock* short and slender. *Leaves* on long stalks, nearly orbicular, 3 to 6 lines in diameter, covered on the upper surface with long, red, viscid hairs, each bearing a small gland at the top. *Flower-stems* slender, erect, glabrous, upper portion consisting of a simple or once-forked unilateral raceme, rolled back when young, but straightening as the flowers expand. *Flowers* white, expanding in sunshine.

Time for collecting.—At commencement of flowering.

Preparation. — Tincture, corresponding in alcoholic strength with proof spirit. Process I.

Proper forms for dispensing.—φ *and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

Average loss of moisture, 80 per cent.

DULCAMARA.

Contractions.—Dulc. Dul.

Solanum Dulcamara, *Linn.* *Nat. ord.*, SOLANACEÆ.

Synonyms.—Dulcamara flexuosa, Vitis sylvestris.

Fig.—Flora Hom., pl. 31.

Woody-nightshade, Bittersweet, Felon-wood. German, *Bittersüss, Hirschkraut;* French, *Douce-amère, Morelle;* Italian, *Morella, Solatro;* Spanish, *Dulcamara.*

Habitat.—Hedges and thickets in moist shady places all over Europe.

Flowering time.—Summer.

Parts employed.—Leaves and young stems.

Characters. — *Stem* shrubby at base, with climbing or straggling branches, which die back in winter. *Leaves* stalked, ovate, usually broadly cordate at the base and entire, sometimes with an additional smaller lobe or segment on each side, either quite glabrous or downy on both sides as well as the stem. *Flowers* small, blue, with yellow anthers, in loose cymes, on lateral peduncles shorter than the leaves. *Berries* small, globular, and red.

Time for collecting.—Before flowering.

Preparation. — Tincture, corresponding in alcoholic strength with proof spirit. Process I.

Proper forms for dispensing.—*ϕ and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

Average loss of moisture, 79 per cent.

ELAPS CORALLINUS.

Contractions.—Elaps. Elp.

Elaps Corallinus, *Mer.*

Class, REPTILIA; *Section,* SQUAMATA; *Order,* OPHIDIA; *Sub-order,* COLUBRINÆ; *Fam.,* ELAPIDÆ.

The Coral Snake of Brazil.

The venom of this snake has been used in the provings. All that was said regarding the obtaining and preserving the poison of *Crotalus* applies equally to this species.

Characters.—Body encircled with equi-distant black rings; muzzle and forehead black.

Preparation.— Solution in glycerine.

Proper forms for dispensing.—*Below* 6, *Tincture only.* 6 *and upwards, Tincture, Pilules, or Globules.*

ELATERIUM.

Contractions.—Elat. Elt.

Echalium officinarum, *Richard.* *Nat. ord.*, CUCURBITACEÆ.

Synonyms.—Momordica Elaterium (*Linn.*). Ecbalium agreste.

Fig.—Steph. and Church., Med. Bot. pl. 34.

Squirting Cucumber. German, *Springgurke;* French, *Concombre sauvage;* Italian, *Cocomero asinino;* Spanish, *Cohombrillo silvestro.*

Habitat.—Greece, and many parts of the South of Europe.

Flowering time.—July.

Part employed.—A sediment from the juice of the fruit, obtained as follows :—

Take of Squirting Cucumber fruit very nearly ripe - - - - -	1 pound.

Cut the fruit lengthwise, and lightly press out the juice. Strain it through a hair sieve, and set it aside to deposit. Carefully pour off the supernatant liquor; pour the sediment on a linen filter, and dry it on porous tiles with a gentle heat. The decanted fluid may deposit a second portion of sediment, which can be dried in the same way.

Characters and Tests.—In light, friable, slightly incurved cakes, about 1 line thick, greenish-grey, acrid and bitter; fracture finely granular. Does not effervesce with acids; yields half its weight to boiling rectified spirit. This solution, concentrated and added to warm solution of Potash, yields on cooling not less than 20 per cent. of Elaterine in colourless crystals.

Preparation.—Trituration.

Proper forms for dispensing.—1^x *to* 3, *Trituration only.* 4 *and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

EUPATORIUM PERFOLIATUM.

Contractions.—Eup-perf. Ept.

Eupatorium perfoliatum, *Linn.* *Nat. ord.*, COMPOSITÆ.

Synonyms.—E. connatum, E. Virginicum.

Fig.—Bigelow, Amer. Med. Bot., pl. 11, vol. i.

Bone-set, Ague-weed, Thorough-wort, Cross-wort.

Habitat.—North America.

Flowering time.—June to October.

Parts employed.—The entire plant.

Characters.—*Root-stock* perennial, horizontal, crooked, with scanty fibres, and sending up many stems. *Stem* erect, round, hairy, branched at top only. *Leaves* opposite, perfoliate-connate, oblong, tapering, acute; upper leaves divided into pairs not joined at the base. *Flowers* white, in corymbs with hairy peduncles. *Seeds* oblong on a naked receptacle.

Time for collecting.—While in flower.

Preparation.—Tincture, corresponding in alcoholic strength with proof spirit, prepared in and imported from North America.

Proper forms for dispensing.—ϕ *and upwards, Tincture, Tincture-trituration, Pilules or Globules.*

EUPATORIUM PURPUREUM.

Contractions.—Eup-pur. Ep-p.

Eupatorium purpureum, *Linn.* *Nat. ord.*, COMPOSITÆ.

Fig.—Lamarck, Encyclop., pl. 672.

Gravel-root, Queen of the Meadow, Trumpet Weed.

Habitat.—America in swamps and low grounds.

Flowering time.—August and September.

Part employed.—The fresh root.

Characters.—A perennial, herbaceous plant. *Stem* stout, solid, green, or sometimes purplish, with a purple band at the joints about 1 inch wide; from 3 to 6 feet high. *Leaves* feather-veined in whorls of 3, 4, and 5 (rarely 2); ovate, oblong-ovate, or lanceolate; smooth above, downy on the veins beneath, coarsely serrate, thin, 8 to 10 inches long, by 4 to 5 inches wide. *Flowers* in a dense and compound corymb, pale purple ranging to whitish. *Heads* cylindrical, 5 to 10 flowered. *Scales* purplish, numerous, closely imbricated in several rows of unequal length, slightly striate. *Root* long, knotty, fibrous, white or brownish, bitter, aromatic and faintly astringent.

Time for collecting.—Before flowering, or when the herb is dying down, in autumn.

Preparations.—Tincture, corresponding in alcoholic strength with proof spirit, prepared in and imported from North America. Triturations of the resinoid known as *Eupurpurin.*

Proper forms for dispensing.—ϕ *and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

Eupurpurin.—1^x *to* 3, *Trituration.*

EUPHORBIUM.

Contractions.—Euphorb. Eub.

Euphorbia resinifera, *Berg.* *Nat. ord.*, EUPHORBIACEÆ.

Synonyms.—Euphorbia officinarum (*Linn.*). E. tenella, Euphorbium polygonum.

Spurge. German, *Wolfsmilch;* French, *Euphorbe;* Italian, *Euforbio;* Spanish, *Euforbio.*

Habitat.—Africa.

Part employed.—The gum-resin, as imported.

Characters.—Dull, yellowish-white, friable tears of irregular shape and size, generally hollow, nearly inodorous; taste intensely acrid. The powder irritates the nostrils and eyes exceedingly.

Time for collecting.—September.

Preparation.—Tincture, using rectified spirit. Process III.

Proper forms for dispensing.—ϕ *and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

EUPHRASIA.

Contractions.—Euph. Eup.

Euphrasia officinalis, *Linn.* *Nat. ord.*, SCROPHULARIACEÆ.

Synonyms.—E. candida, Euphragia alba.

Fig.—Flora Hom., pl. 33.

Eyebright. German, *Augentrost, Milchdienst;* French, *Eufrasie;* Italian, *Eufragra.*

Habitat.—In pastures throughout Europe and Asia. Abundant in Great Britain.

Flowering time.—Summer and autumn.

Parts employed.—The entire plant.

Characters.—A little, much branched annual, varying greatly in size and in other respects, from 1 to 8 inches high. *Stem* glabrous or slightly downy. *Leaves* small, sessile, opposite, ovate, deeply toothed, the teeth of the lower ones obtuse, of the upper finely pointed. *Flowers* in loose terminal leafy spikes, calyx with 4 or 5 pointed teeth, corolla white or reddish, streaked with purple and with a yellow spot on the throat, the tube usually shorter than the spreading lobes. *Capsule* oblong.

Time for collecting.—July.

Preparation. — Tincture, corresponding in alcoholic strength with proof spirit. Process I.

Proper forms for dispensing.—*ϕ and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

Average loss of moisture, 67 per cent.

FERRUM ACETICUM.

Contractions.—Ferr-a. Fer.

Synonym.—Ferri Acetas.

Present name.—Ferric Acetate. $Fe_2(C_2H_3O_2)_6$.

Acetate of Iron. German, *Essigsaures Eisen;* French, *Acetate de fer;* Italian, *Acetato di ferro;* Spanish, *Acetato de hierro.*

Prepared by dissolving Moist Peroxide of Iron in Acetic Acid until saturated, and concentrating the solution by evaporation on a water bath, until a portion of the liquid withdrawn on the end of a glass rod and stirred on a watch glass quickly assumes a jelly like appearance, and the remainder, when cooled, has a specific gravity of at least 1·288. It may be kept in this form or cautiously evaporated to dryness. It should be freshly made, and preserved in well stoppered bottles.

Characters and Tests.—A deep brownish-red liquid having a specific gravity of 1·288, red-brown scales or an orange-brown powder, having in each case a strong acetous odour and a powerful astringent taste. Freely and entirely soluble in distilled water. The solution becomes nearly colourless when boiled with diluted Nitric Acid.

Preparation.—Solution in distilled water for 1^x, using dilute alcohol up to 3^x, and afterwards rectified spirit.

Proper forms for dispensing.—*φ to 1, Solution only.* 3^x *and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

FERRUM CARBONICUM.

Contractions.—Ferr-c. F-ca.

Synonym.—Ferri Carbonas Saccharata.

Present name.—Ferrous Carbonate. $FeCO_3$.

Saccharated Carbonate of Iron. German, *Kohlensaures Eisen;* French, *Carbonate de fer;* Italian, *Carbonato di ferro;* Spanish, *Carbonato de hierro.*

This preparation contains at least 37 per cent. of the carbonate, mixed with peroxide of iron and sugar.

Take of Sulphate of Iron - - -	2	ounces;
Carbonate of Ammonia - -	1¼	ounce;
Boiling Distilled Water - -	2	gallons;
Syrup - - - - -	16	fluid ounces;
Refined Sugar - - -	1	ounce.

Dissolve the sulphate of iron and the carbonate of ammonia each in half a gallon of the water, to which 4 fluid ounces of syrup has been added, and mix the two solutions with brisk stirring in a deep cylindrical vessel, which is then to be covered as accurately as possible. Set the mixture by for twenty-four hours, and from the precipitate, which has subsided, separate the supernatant solution by a siphon. Pour on the remainder of the water and syrup, stir well, and, after subsidence, again remove the clear solution. Collect the resulting carbonate on a calico filter, and, having first subjected it to expression, rub it with the sugar in a porcelain mortar. Finally dry the mixture at a temperature not exceeding 212°.

Characters and Tests.—Small coherent lumps or powder of a grey-brown colour, with a sweet, very feeble, chalybeate taste. It dissolves with effervescence in warm Hydrochloric Acid, diluted with half its volume of water, and the solution gives but a very slight precipitate with Chloride of Barium. 20 grains dissolved in excess of Hydrochloric Acid and diluted with water continue to give a blue precipitate with the red Prussiate of Potash, until at least 208 grain measures of the volumetric solution of Bichromate of Potash have been added.

Preparation.—Trituration, using 3 parts to 7 parts of sugar of milk to make 1^x.

Proper forms for dispensing.—1^x *to* 3, *Trituration only.* 4 *and upwards, Tincture, Tincture-trituration, Pilules or Globules.*

FERRUM IODATUM.

Contractions.—Ferri-i. F-io.

Synonym.—Ferri Iodidum.

Present name.—Ferrous Iodide. FeI_2.

Saccharated Iodide of Iron. German, *Jod Eisen;* French, *Iodure de fer;* Italian, *Ioduro di ferro.*

A syrup may be prepared as follows:—

Take of Fine Iron Wire, free from rust	1 ounce;
Iodine	2 ounces;
Refined Sugar	28 ounces;
Distilled Water	13 fluid ounces;

Prepare a syrup by dissolving the sugar in 10 ounces of the water with the aid of heat, and keep it hot. Digest the iodine and the iron wire in a flask at a gentle heat, with the remaining 3 ounces of the water, till the froth becomes white; then filter the liquid while still hot into the syrup and mix. The product should weigh 2 pounds 11 ounces, and should have the specific gravity 1·385.

Or a saccharated powder as follows:—

Take of Fine Iron Wire, free from rust	1 ounce;
Iodine	2 ounces;
Distilled Water	3 fluid ounces;
Sugar of Milk, in powder	10 ounces.

Digest the iodine and the iron wire in a flask at a gentle heat with 2½ ounces of the water till the froth becomes white; then filter the liquid while still hot into a porcelain capsule containing 6 ounces of the sugar of milk, washing the filter with the remainder of the water, and evaporate at a temperature not exceeding 120° with constant stirring, till a tenacious mass remains. Then add the remainder of the sugar of milk, mix, reduce the mixture to powder in a warm mortar, and keep it in amber glass bottles.

Characters and Tests.—A transparent syrupy liquid, having a pale-green tint: or a yellowish-green powder; inodorous, deliquescent, almost entirely soluble in water, forming a slightly green solution which remains unaltered when kept for a long time. An aqueous solution of either preparation gives a copious blue precipitate with the red Prussiate of Potash. Mixed with mucilage of starch, it acquires a blue colour on the addition of a minute quantity of solution of Chlorine.

Preparations. — 1. The above syrup contains about 1 grain in 14 minims; and hence 14 minims diluted with 86 minims of syrup will make 1. Equal measures of syrup and distilled water to which 5 per cent. of rectified spirit has been added should be used for 3^x, dilute alcohol for 2, and rectified spirit for 5^x and upwards.

2. Trituration of the freshly prepared saccharated powder, in a warm mortar, with an equal weight of sugar of milk will form the 1^x, from which the higher triturations are made in the usual manner.

N.B.—Preparations of iodide of iron are best preserved in small, well-filled, stoppered bottles of amber glass. They soon begin to decompose in partly filled bottles which are frequently opened.

Proper forms for dispensing.—1^x *to* 3, *Trituration, or* 1 *to* 2 *Solution;* 5^x *and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

FERRUM MAGNETICUM.

Contractions.—Ferr-mag. F-mg.

Synonym.—Ferri Oxidum Magneticum.

Present name.—Ferroso-ferric Oxide. $FeO.Fe_2O_3$.

Black or Magnetic Oxide of Iron, Loadstone, combined with about 20 per cent. of water of hydration, and containing some Peroxide of Iron.

German, *Magneteisen;* French, *Oxyde magnetique de fer;* Italian, *Ossido magnetico di ferro.*

It may be prepared as follows:—

Take of Solution of Persulphate of Iron	$5\frac{1}{2}$ fluid ounces;
Sulphate of Iron - - -	2 ounces;
Solution of Soda - -	4 pints;
Distilled Water - - -	A sufficiency.

Dissolve the sulphate of iron in 2 pints of the water and add to it the solution of persulphate of iron, then mix this with the solution of soda, stirring them well together. Boil the mixture, let it stand for two hours, stirring it occasionally, then put it on a calico filter, and when the liquid has drained away, wash the precipitate with distilled water until what passes through the filter ceases to give a precipitate with chloride of barium. Lastly, dry the precipitate at a temperature not exceeding 120°.

Characters and Tests.—Brownish-black, destitute of taste, strongly attracted by the magnet. It dissolves without effervescence in Hydrochloric Acid diluted with half its volume of water, and the solution thus obtained gives blue precipitates with the red and yellow Prussiates of Potash. When a small quantity is heated in a dry test-tube by the flame of a lamp, a deposit of moisture takes place in the cool part of the tube. 20 grains dissolved in Hydrochloric Acid continue to give a blue precipitate with the red Prussiate of Potash until 230 grain measures of the volumetric solution of Bichromate of Potash have been added.

Preparation.—Trituration.

Proper forms for dispensing.—1^x *to* 3, *Trituration only.* 4 *and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

FERRUM METALLICUM.

Contractions.—Ferr-m. F-me.

Iron. Fe. German, *Eisen;* French, *Fer;* Italian, *Ferro;* Spanish, *Hierro.*

Pure Iron filings, prepared from wrought iron by means of a new file and sifted through fine linen.

Characters and Tests.—A fine grey heavy metallic powder, strongly attracted by the magnet. Dissolves in Hydrochloric Acid with the evolution of hydrogen, and the solution gives a light-blue precipitate with the yellow Prussiate of Potash. Three grains when warmed with half a fluid drachm of Nitric Acid diluted with an equal bulk of distilled water dissolve without residue, or with only a trace, yielding a solution which is nearly colourless after cooling, or has only a faint brownish, and not a greenish tinge.

Preparation.—Trituration.

Proper forms for dispensing.—1^x *to* 3, *Trituration only.* 4 *and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

FERRUM MURIATICUM.

Contractions.—Ferr-mur. F-mu.

Synonyms.—Ferri Perchloridum, Ferrum Sesquichloratum.

Present name.—Ferric Chloride. Fe_2Cl_6.

Perchloride of Iron, Muriate of Iron. German, *Salzsaures Eisen;* French, *Sesquichlorure de fer;* Italian, *Sesquichloruro di ferro.*

Take of Iron Wire - - -	2 ounces;
Hydrochloric Acid - -	12 fluid ounces;
Nitric Acid - - -	9 fluid drachms;
Distilled Water - -	8 fluid ounces.

Mix 8 fluid ounces of the hydrochloric acid with the distilled water, and in this dissolve the iron at a gentle heat. Filter the solution, add to it the remainder of the hydrochloric acid and the nitric acid; heat the mixture briskly until, on the sudden evolution of red fumes, the liquid becomes of an orange-brown colour, then evaporate by the heat of a water-bath until it is reduced to 10 fluid ounces.

Characters and Tests.—An orange-brown solution, with a strong styptic taste, miscible with water, and rectified spirit in all proportions. Diluted with water it is precipitated white by Nitrate of Silver, and blue by yellow Prussiate of Potash, but not at all by red Prussiate of Potash. Specific gravity 1·44. A fluid drachm of it diluted with 2 fluid ounces of water gives, upon the addition of an excess of solution of Ammonia, a reddish-brown precipitate, which, when well washed and incinerated, weighs 15·62 grains.

Preparation.—As 1 fluid drachm of the above preparation contains 31·7 grains of the anhydrous salt, 2½ fluid drachms diluted to 13 fluid drachms with rectified spirit will form the 1^{x} attenuation. Rectified spirit is used for all attenuations above this.

Proper forms for dispensing.—1^{x} *and* 1, *Tincture only.* 3^{x} *and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

FERRUM REDACTUM.

Contractions.—Ferr-red. F-r.

Reduced Iron.

Metallic Iron with a variable quantity of Magnetic Oxide of Iron. It may be prepared as follows:—

Take of Hydrated Peroxide of Iron -	1 ounce;
Zinc, granulated - - -	A sufficiency;
Sulphuric Acid - - -	A sufficiency
Chloride of Calcium - -	A sufficiency.

Introduce the hydrated peroxide of iron into a gun-barrel, confining it to the middle part of the tube by plugs of asbestos. Pass the gun-barrel through a furnace, and when it has been raised to a strong red heat, cause it to be traversed by a stream of hydrogen gas, developed by the action on the zinc of some of the sulphuric acid diluted with eight times its volume of water. The gas before entering the gun barrel must be rendered quite dry by being made to pass first through the remainder of the sulphuric acid, and then through a tube 18 inches long, packed with small fragments of the chloride of calcium. The further end of the gun barrel is to be connected by a cork with a bent tube dipping under water; and when the hydrogen is observed to pass through the water at the same rate that it bubbles through the sulphuric acid, the furnace is to be allowed to cool down to the temperature of the atmosphere, the current of hydrogen being still continued. The reduced iron is then to be withdrawn, and enclosed in a dry stoppered bottle.

Characters and Tests.—A fine greyish-black powder, strongly attracted by the magnet, and exhibiting metallic streaks when rubbed with firm pressure in a mortar. It dissolves in Hydrochloric Acid with the evolution of Hydrogen, and the solution gives a light blue precipitate with the yellow Prussiate of Potash. 10 grains added to an aqueous solution of 50 grains of Iodine and 50 grains of Iodide of Potassium, and digested in a small flask at a gentle heat, leave not more than 5 grains undissolved, which should be entirely soluble in Hydrochloric Acid.

Preparation.—Trituration.

Proper forms for dispensing.—1^x *to* 3, *Trituration only.* 4 *and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

FILIX MAS.

Contractions.—Filix. Fil.

Aspidium Filix mas, *Swartz.* *Nat. ord.*, FILICES.

Synonyms.—Lastrea F. m., Polypodium F. m.

Fig.—Engl. Bot., t. 1458.

Male Fern. German, *Männliches Farrenkraut;* French, *Foùgere mâle;* Italian, *Felce maschio;* Spanish, *Helecho.*

Habitat.—In woods and shady situations, along moist banks, throughout Europe and Central and Russian Asia. Very common in Britain.

Part employed.—The fresh root-stock.

Characters.—Tufted, scaly, greenish-brown, having a disagreeable odour and nauseous, bitter, somewhat astringent taste.

Time for collecting.—Autumn, when the fronds are dying.

Preparations.—Tincture, corresponding in alcoholic strength with 20 O.P. spirit. Process I.

Liquid Extract, *vide* Appendix.

Proper forms for dispensing.—*ϕ and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

Average loss of moisture, 71 per cent.

GAMBOGIA.

Contractions.—Gum-g. Gum.

Garcinia Morella, *Desrous, var.* pedicellata. *Nat. ord.*, GUTTIFERÆ.

Synonyms.—Gummi Gutti, Garcinia Hanburii, Cambogia.

Fig.—Hanbury, *Linn.* Trans., vol. xxiv., t. 50.

Gamboge. German, *Gummitaz, Gummigut;* French, *Gomme-gutte;* Italian, *Gomma gotta;* Spanish, *Gutta gamba.*

Habitat.—Siam and Cochin China.

Part employed.—The gum-resin.

Characters.—In cylindrical pieces, breaking easily with a smooth conchoidal glistening fracture; colour tawny, changing to yellow when it is rubbed with water; taste acrid. An emulsion made with boiling water and cooled, does not become green with the solution of Iodine.

Preparation.—Tincture 1 in 20, using rectified spirit. Process III.

Proper forms for dispensing.—*φ and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

GELSEMIUM.

Contractions.—Gelsem. Gel.

Gelsemium sempervirens, *Gray.* *Nat. ord.*, LOGANIACEÆ.

Synonyms. — Gelsemium nitidum, Bignonia sempervirens.

Fig.—Hale's New Remedies.

Yellow Jessamine, Field Jessamine, Woodbine.

Habitat.—Southern States of America.

Flowering time.—March till May.

Part employed.—The root.

Characters.—Stem twining, smooth, shining, with opposite perennial, lanceolate, entire *leaves,* dark-green above, pale beneath, on short petioles; *flowers* yellow, having an agreeable but rather narcotic odour, on axillary peduncles; calyx very small, with 5 sepals; corolla funnel-form, with a spreading border and 5 lobes, nearly equal; stamens 5, pistils 2; capsules two-celled, compressed, flat, bipartite. *Seeds* flat, and attached to the margins of the valves. The berries are black. *Root* several feet in length, with scattered fibres, varying from 2 to 3 lines in diameter to nearly 2 inches, woody internally and of a light yellowish colour; externally of a light snuff colour; bark from half a line to 3 lines in thickness. Odour narcotic; taste bitterish, not unpleasant.

Preparation.—Tincture, corresponding in alcoholic strength with proof spirit. Process I.

Proper forms for dispensing.—*φ and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

GLONOINUM.

Contractions.—Glon. Glo.

Present name.—Glyceric Trinitrate. $C_3H_5(NO_3)_3$.

Glonoine, Nitro-glycerine.

Prepared by the action of a mixture of Nitric and Sulphuric Acids upon Glycerine. The process requires the greatest care and caution, since the reaction is apt to become violent and the product liable to explode during preparation; any sudden jerk may also cause a fatal accident.

As it may now be obtained pure from some of our chemists, as a solution in absolute alcohol in the proportion of 10 per cent. by weight, the preparation of it need not be attempted by those less accustomed to its manipulation.

Characters of the Alcoholic Solution.—A clear, colourless solution, a few drops of which, when let fall into a little distilled water, precipitate colourless globules, having an oily appearance. Half a fluid drachm of the solution ignited in a porcelain crucible burns with a somewhat smoky flame, leaving a yellow liquid residue which, when heated over a flame, deflagrates with a slight detonation.

Preparation. — Solution in absolute alcohol, 10 per cent. by weight or 1 grain in 14 minims nearly.

100 minims diluted with rectified spirit till it measures 1½ fluid ounce will form the 1 attenuation, and rectified spirit may be used for all above.

Proper forms for dispensing.—1 *in* 14 *and upwards, Tincture, Pilules, or Globules.*

GRANATUM.

Contractions.—Gran. Grn.

Punica Granatum, *Linn.* *Nat. ord.*, MYRTACEÆ.

Fig.—Hayne, x., 35.

Pomegranate. German, *Granatbaum ;* French, *Grenadier ;* Italian, *Granata ;* Spanish, *Granadas.*

Habitat.—Asia, Northern Africa, Southern Europe and tropical America.

Part employed.—The bark of the root as imported.

Characters.—In quills or fragments of a greyish-yellow colour externally, yellow internally, having a short fracture, little odour, and an astringent, slightly bitter taste.

Preparation. — Tincture, using proof spirit. Process I.

Proper forms for dispensing.—*ϕ and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

GRAPHITES.

Contractions.—Graph. Grp.

Blacklead, Plumbago, Graphite. German, *Reisblei*; French, *Graphite*; Italian, *Piombaggine*; Spanish, *Plombagina.*

A mineral carbon, containing a small, indefinite quantity of iron. In the proving, Hahnemann used a trituration made from the prepared blacklead in the finest English drawing pencils. This, therefore, is the source from which the substance should be obtained.

Preparation.—Trituration.

Proper forms for dispensing.—1^x to 3, *Trituration only.* 4 *and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

GUAIACUM.

Contractions.—Guiac. Gui.

Guaiacum officinale, *Linn.* *Nat. ord.*, ZYGOPHYLLACEÆ.

Synonyms.—Lignum vitæ, Lignum sanctum.

Fig.—Flor. Hom., pl. 34.

Guaiacum. German, *Pockenholz*; French, *Gaiac*; Italian, *Legno santo, Guaiaco*; Spanish, *Guayaco, Palo santo.*

Habitat.—West Indies and South America.

Part employed.—The gum resin.

Characters.—In large masses of a brownish or greenish-brown colour; fractured surface resinous, translucent at the edges. A solution in rectified spirit strikes a clear blue colour when applied to the inner surface of a raw potato-paring.

Preparation. — Tincture, using rectified spirit. Process III.

Proper forms for dispensing.—*ϕ and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

GUMMI GUTTI. *Vide* GAMBOGIA.

HAMAMELIS.

Contractions.—Hama. Ham.

Hamamelis Virginica, *Linn.* *Nat. ord.*, HAMAMELIDACEÆ.

Synonyms.—H. macrophylla, H. Dioica.

Fig.—Bart, F. N. Amer., t. 78.

Witch Hazel. German, *Zauberstrauch;* French, *Hamamelis.*

Habitat.—In moist woods, Canada to Louisiana.

Flowering time.—October and November.

Part employed.—The bark.

Characters.—*Stem* 8 to 12 feet high, branches flexuous. *Leaves* on short petioles. *Petals* a little crooked. *Ovary* hirsute. The flowers usually appear late in autumn, after the leaves have fallen, although sometimes not until the following spring, and its fruit is perfected the following year. The *bark* comes to us in incurved pieces or quills coated with a smoothish, grey, spotted periderm; transverse fracture finely fibrous, rarely exceeding a line in thickness; inner surface reddish-brown or buff-coloured; has a peculiar aromatic and characteristic odour; and a bitter, astringent taste, with a somewhat sweet and pungent after-taste.

Time for collecting.—Before flowering and after the fruit has ripened.

Preparation. — Tincture, corresponding in alcoholic strength with proof spirit. Process I. Trituration of the resinoid known as *Hamamelin.*

Proper forms for dispensing.—ϕ *and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

Hamamelin.—1^x *to* 3, *Trituration.*

HELLEBORUS.

Contractions.—Helleb. Hel.

Helleborus niger, *Linn.* *Nat. ord.*, RANUNCULACEÆ.

Fig.—Flor. Hom., pl. 35.

Black Hellebore, Christmas Rose. German, *Schneerose, Schwarze Niesswurzel;* French, *Rose de Noel;* Italian, *Elleboro nero;* Spanish, *Helleboro negro.*

Habitat.—Lower mountains of Central Europe. Cultivated as a flower in our gardens.

Flowering time.—December to March.

Part employed.—The fresh root.

Characters.—A black, rough, knotty rhizome, from which descend numerous root fibres. *Leaves* palmate, on long footstalks springing directly from the root; leaflets 5 or more, ovate-lanceolate, smooth, shining, coriaceous, serrated. *Scapes* leafless, bearing 1 or 2 flowers.

Time for collecting.—Christmas, just before flowering.

Preparation. — Tincture, corresponding in alcoholic strength with proof spirit.

Proper forms for dispensing.—ϕ *and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

Average loss of moisture, 60 per cent.

HELONIAS.

Contractions.—Helon. Hln.

Helonias dioica, *Pursh.* *Nat. ord.*, MELANTHACEÆ.

Synonyms.—Melanthium dioicum, Veratrum luteum (*Linn.*), Chamælirium luteum.

Fig.—Linn. Amœnit., tab. 1, fig. 1.

False Unicorn, Blazing Star.

Habitat.—In woodlands, meadows, and moist situations, in the United States.

Flowering time.—June and July.

Part employed.—The root.

Characters.—An herbaceous perennial, with a large, somewhat bulbous, very hard, transversely wrinkled, premorse *root*, from which arises a simple, very smooth, somewhat angular *stem* or *scape*, 1 or 2 feet in height. *Cauline leaves* lanceolate, acute, small, and at some distance from each other, without petioles; *radical leaves* broader, being from 4 to 8 inches in length by half an inch to an inch in width, narrow at the base, and formed into a sort of whorl at the base of the scape. *Flowers* small, very numerous, greenish-white, disposed in long, terminal, spicate, nodding, diœcious racemes, resembling a plume, and more slender and weak on the barren plants. *Male flowers* with white, linear-spatulate, obtuse, one-nerved petals; stamens rather longer than the petals. *Female flowers*, on a raceme generally few-flowered, becoming erect; petals linear; stamens very short, abortive; ovary ovate, sub-triangular, with the sides deeply furrowed; stigmas 3, spreading or reflexed. *Capsule* ovate-oblong, tapering to the base, three-furrowed, opening at the summit. *Seeds* many in each cell, acute compressed.

N.B.—The plant is sometimes confounded with Aletris farinosa.

Time for collecting.—At the commencement of flowering, and when the leaves are dying down.

Preparation. — Tincture, corresponding in alcoholic strength with proof spirit. Process I. Trituration of the resinoid known as *Helonin.*

Proper forms for dispensing.—ϕ *and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

Helonin.—1^x *to* 3, *Trituration.*

HEPAR SULPHURIS.

Contractions.—Hep.-s. Hep.

Synonym.—Hepar Sulphuris Calcareum.

Present name.—Impure Calcic Sulphide. CaS.

Sulphuret of Lime, Liver of Sulphur.* German, *Schwefelleber ;* French, *Foie de soufre calcaire.*

This must be prepared according to Hahnemann's directions, viz., by mixing equal weights of finely-powdered clean oyster-shells and pure flowers of Sulphur, placing them in a hermetically-closed clay crucible, and keeping the mixture at a white heat for at least ten minutes. When cold open the crucible, and preserve the Hepar in amber glass, stoppered bottles.

Characters and Tests.—White porous friable masses, or a white amorphous powder, having the odour of Sulphuretted Hydrogen, and a corresponding putrid taste ; it is insoluble in cold water, soluble in hot Hydrochloric Acid with evolution of Sulphuretted Hydrogen. The solution gives a white precipitate with Oxalate of Ammonia.

Preparation.—Trituration.

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* The names "Hepar Sulphuris" and "Liver of Sulphur" are also applied to the Sulphuret of Potassium of the Dublin Pharmacopœia.

Proper forms for dispensing.—1^x *to* 3, *Trituration only.* 4 *and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

HYDRASTIS.

Contractions.—Hydrast. Hdr.

Hydrastis Canadensis, *Linn.* *Nat. ord.*, RANUNCULACEÆ.

Synonym.—Warneria Canadensis.

Fig.—Miller, Icones, t. 285.

Golden Seal, Yellow Root. German, *Canadische Gilbwurzel ;* French, *Hydrastis de Canada.*

Habitat.—In shady woods, particularly sides of mountains, Canada to Carolina, Ohio, and Kentucky.

Flowering Time.—April and May.

Part employed.—The root.

Characters.—*Rhizome* tortuous, knotty, wrinkled, giving out a number of fibrous rootlets, internally bright yellow, of a peculiar odour. *Leaves* pubescent when young, cordate, palmated, 3 to 8 lobed. *Calyx* pale rose coloured. *Fruit* red, seeds obovate.

Time for collecting.—When the plant is dying down in autumn, or when sprouting in spring.

Preparations. — Tincture, corresponding in alcoholic strength with proof spirit. Process I. Infusion.

Proper forms for dispensing.—ϕ *and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

HYOSCYAMUS.

Contractions.—Hyos. Hyo.

Hyoscyamus niger, *Linn.* *Nat. ord.*, SOLANACEÆ.

Synonyms.—H. vulgaris, H. lethalis, H. flavus.

Fig.—Flora Hom., pl. 36.

Henbane, Hogbean. German, *Bilsenkraut;* French, *Jusquiame;* Italian, *Beleno, Veleno;* Spanish, *Miemendro, Velheno.*

Habitat. — Waste and stony places in Central and Southern Europe. In Britain, chiefly on rubbish about villages and old castles.

Flowering time.—Summer.

Parts employed.—The herbaceous part of the biennial plant.

Characters.—A coarse, erect, branching biennial, 1 to 4 feet high, more or less hairy and viscid, and with a nauseous smell. *Leaves* rather large, sessile, the upper ones clasping the stem, ovate, irregularly pinnatifid. *Flowers* very shortly stalked. *Calyx* persistent, strongly veined, with 5 stiff, broad, almost prickly lobes. *Corolla* pale dingy yellow with purple veins. *Capsule* globular, with numerous small seeds.

Time for collecting.—When partially in flower.

Preparation. — Tincture, corresponding in alcoholic strength with dilute alcohol. Process I.

Proper forms for dispensing.—*ϕ and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

Average loss of moisture, 82 per cent.

HYPERICUM.

Contractions.—Hyper. Hyp.

Hypericum perforatum, *Linn.* *Nat. ord.*, HYPERICACEÆ.

Synonyms. — H. perfoliatum, Fuga dæmonum, Herba umbelicalis.

Fig.—Engl. Bot., t. 295.

St. John's Wort. German, *Johanniskraut, Hexenkraut;* French, *Herbe St. Jean.*

Habitat.—In woods, hedges, and thickets throughout Europe, and in Central and Russian Asia. Abundant in Britain.

Flowering time.—Summer and autumn.

Parts employed.—The entire fresh plant.

Characters.—*Root-stock* perennial, with short runners. *Stem* erect, 1 to 1½ foot high, branching in upper part, cylindrical, or with two slightly prominent opposite angles, quite glabrous. *Leaves* sessile, oblong, marked with pellucid dots, and occasionally a few black ones on the under side. *Flowers* bright yellow, in a handsome terminal corymb; sepals lanceolate, pointed, quite entire, with a few glandular lines or dots; petals twice as long, marked with black dots; stamens numerous, shortly united into three bundles; styles, 3.

Time for collecting.—When in flower and seed.

Preparation.—Tincture, corresponding in alcoholic strength, with proof spirit. Process I.

Proper forms for dispensing.—*ϕ and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

Average loss of moisture, 59 per cent.

IGNATIA.

Contractions.—Ignat. Ign.

Ignatia amara, *Linn.* *Nat. ord.*, LOGANIACEÆ.

Synonyms.—Faba Sancti Ignatii, Strychnos Ignatia, Faba Indica.

Fig.—Flora Hom., pl. 37.

St. Ignatius's Bean. German, *Ignatzbohne;* French, *Fève de St. Ignace;* Italian, *Faba St. Ignatii;* Spanish, *Haba de Santo Ignacio.*

Habitat.—East Indies and the Philippine Islands.

Parts employed.—The seeds, as imported.

Characters.—Size of a large almond, irregular, angular, and stone-like, glabrous, inodorous; outside, blackish-grey, or clear brown; inside, when pared, brown-yellow, and somewhat shining and semi-translucent; very hard and horny; has a disagreeable, murky odour, and an excessively bitter taste.

Preparations.—Tincture, using 20 O.P. spirit. Process I. Trituration.

N.B.—As the hard, horny nature of the seed renders it extremely difficult to pulverize in a mortar, it should be first coarsely ground in a suitable mill.

Proper forms for dispensing.—1^x *to* 3 *Trituration; or* ϕ *and upwards, Tincture, Tincture-trituration, Pilules or Globules.*

INDIGO.

Contractions.—Indig. Ind.

Indigofera, *Linn.* *Nat. ord.*, LEGUMINOSÆ.

Indigo.

Habitat.—East Indies, middle regions of America, and tropical Africa.

Parts employed.—A peculiar dye stuff obtained by oxidation of an infusion of the leaves and stems of several species, especially *tinctoria.*

Characters.—The imported Indigo, if good, has the following characters: A dark blue colour, passing into violet-purple, void of taste and smell, but by rubbing with a smooth, hard substance it assumes the lustre and hue of copper or bronze.

It floats in water. When burned it leaves very little residue. Soluble in Sulphuric Acid, forming a deep blue solution; insoluble in water or ether. Its colour is not changed by alkalis.

Preparation.—Trituration.

Proper forms for dispensing.—1^x to 3, *Trituration only.* 4 *and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

IODIUM.

Contraction.—Iod.

Synonyms.—Iodum. Iodinium.

Iodine. I.

German, *Jod;* French, *Iode;* Italian, *Iodina;* Spanish, *Iodina.*

Obtained principally from the ashes of sea weeds and purified by re-sublimation.

Characters and Tests.—In laminar crystals, of a peculiar odour, dark colour, and metallic lustre, which, when heated, yield a beautiful violet coloured vapour; very sparingly soluble in water, but freely dissolved by alcohol, by ether, and by a solution of Iodide of Potassium. The aqueous solution strikes a deep blue colour with Starch. It sublimes without leaving any residue, and the portion that first comes over does not include any slender colourless prisms emitting a pungent odour. 12·7 grains dissolved in an ounce of water containing 15 grains of Iodide of Potassium, require for complete discolouration 1,000 grain measures of the volumetric solution of Hyposulphite of Soda.

Preparation.—Solution in rectified spirit, forming the 1^x attenuation.

N.B.—It must be borne in mind that there is no mother tincture of Iodine, as ϕ represents the crude substance. The 1^x tincture, as stated above, is the strongest homœopathic preparation. It is thought desirable to call attention to this, as some misapprehension has existed.

Proper forms for dispensing.—1^x *Tincture only.* 1 *and upwards, Tincture, Pilules, or Globules.*

IPECACUANHA.

Contractions.—Ipec. Ipc.

Cephaëlis Ipecacuanha, *Rich.* *Nat. ord.*, RUBIACEÆ.

Synonyms.—Callicocca Ipecacuanha, Ipecacuanha fusca, Psychotria Ipecacuanha.

Fig.—Flora Hom., pl. 38.

Ipecacuan. German, *Brechwurzel;* French, *Ipecacuana;* Italian, *Ipecaquanha;* Spanish, *Ipecacuana.*

Habitat.—Brazil.

Part employed.—The root.

Characters.—In pieces 3 or 4 inches long, the size of a small quill, contorted and irregularly annulated; various shades of brown in colour. It consists of two parts—the cortical or active portion, which is brittle, and a slender, tough, white woody centre. When powdered it has a faint nauseous odour, and a somewhat acrid and bitter taste.

Preparations.—Tincture, using 20 O.P. spirit. Process I. Trituration.

Proper forms for dispensing.—ϕ *and upwards, Tincture, Tincture-trituration, Pilules, or Globules; or* 1^x *to* 3, *Trituration.*

IRIS VERSICOLOR.

Contractions.—Iris. Irs.

Iris versicolor, *Linn.* *Nat. ord.*, IRIDACEÆ.

Synonym.—Iris hexagona.

Fig.—Bigelow, Amer. Med. Bot., pl. 16.

Blue Flag. German, *Iris, Violenwurzel;* French, *Iris;* Italian, *Iride;* Spanish, *Iris.*

Habitat.—Throughout the United States, borders of swamps and moist meadows.

Flowering time.—May to July.

Part employed.—The fresh root.

Characters.—*Root* fleshy, horizontal, sending down a multitude of fibres; taste, acrid and nauseous. *Stem* 2 to 3 feet high, rounded on one side, acute on the other, frequently branched, bearing from 2 to 6 flowers. *Leaves* sword-shaped, striated, sheathing at the base. *Flowers,* outer petal spatulate, beardless, border purple, claw variegated with green, yellow, and white, and veined with purple. *Seeds* numerous.

Time for collecting.—Late autumn or early spring.

Preparations.—Tincture, corresponding in alcoholic strength with dilute alcohol, prepared in and imported from North America. Trituration of the resinoid known as *Irisin.*

Proper forms for dispensing.—*ϕ and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

Irisin.—1^x *to* 3, *Trituration.*

KALI BICHROMICUM.

Contractions.—Kali-bich. K-bi.

Synonym.—Potassæ Bichromas.

Present name.—Potassic Dichromate. $K_2Cr_2O_7$.

The well-known *Bichromate of Potash* used in dyeing.

German, *Zweifach Chromsáures Kali;* French, *Bichrômate de potasse;* Italian, *Bicromato di potassa.*

It may be purified by dissolving in hot distilled water and allowing it to crystallize.

Characters and Tests.—Red, transparent, anhydrous, four-sided tables fusing below redness and splitting to pieces on cooling; at a higher temperature it decomposes, yielding green Oxide of Chromium and yellow Chromate of Potash, which may be separated by dissolving the latter in water. The Bichromate dissolved in water gives a pale yellow precipitate with Chloride of Barium, and a purplish red precipitate with Nitrate of Silver, and both these precipitates are soluble in diluted Nitric Acid. The solution also when digested with Sulphuric Acid and rectified spirit acquires an emerald green colour.

Preparations.—Solution in distilled water, 1 in 20. Trituration.

The 1 attenuation is made with distilled water; 3^x to 3 with distilled water to which 5 per cent. of rectified spirit has been added; 7^x and 4 with dilute alcohol; and all above with rectified spirit.

N.B.—The liquid attenuations should not be made from the triturations, as a partial decomposition takes place after some time.

Proper forms for dispensing.—1^x *to* 3, *Trituration; or* 1 *in* 20 *to* 3, *Solution.* 4, *dilute Tincture only.* 5 *and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

KALI BROMATUM.

Contractions.—Kali-brom. K-br.

Synonym.—Potassii Bromidum.

Present name.—Potassic Bromide. KBr.

Bromide of Potassium. German, *Brom Kalium;* French, *Bromure de potassium;* Italian, *Bromuro di potassa.*

Prepared by the addition of Bromine to solution of Potash (*Kali causticum*) in successive portions, with constant agitation, until the mixture has acquired a permanent brown tint. It is then mixed with vegetable charcoal and cautiously fused in an iron crucible, cooled, and purified by repeated crystallization until it answers to the following

Characters and Tests.—In colourless cubical crystals, with no odour, but a pungent saline taste, readily soluble in water, less soluble in spirit. Its aqueous solution gives a white crystalline precipitate with Tartaric Acid. When its solution in water is mixed with a little Chlorine, Chloroform agitated with it, on falling to the bottom, exhibits a red colour. 10 grains require, for complete decomposition, 840 grain measures of the volumetric solution of Nitrate of Silver. A solution of the salt mixed with mucilage of Starch and a drop of an aqueous solution of Bromine or Chlorine, does not exhibit any blue colour.

It should be kept in a well stoppered bottle.

Preparation.—Solution in distilled water for 1^x, using rectified spirit for 1 and upwards.

Proper forms for dispensing. — 1^x, *Solution only.* 1 *and upwards, Tincture, Pilules, or Globules.*

KALI CARBONICUM.

Contractions.—Kali-c. K-ca.

Synonym.—Potassæ Carbonas.

Present name.—Potassic Carbonate. K_2CO_3.

Carbonate of Potash. — German, *Kohlensaures Kali;* French, *Sous-carbonate de potasse;* Italian, *Carbonato di potassa.*

Prepared by heating pure *Cream of Tartar* to a red heat, and then allowing the product to deliquesce slowly by exposure to moist air. The cream of tartar should first be moistened with a little distilled water and formed into a ball; it is then wrapped in filtering-paper and dried, after which it can be conveniently heated to bright redness on hot coals. The product is placed in a porcelain capsule, covered with a cloth, in a damp cellar for two or three weeks. It is then treated with distilled water, and the solution filtered, and evaporated to dryness, stirring briskly towards the close of the process.

Characters and Tests.—A white crystalline powder, alkaline and caustic to the taste, very deliquescent, readily soluble in water, but insoluble in alcohol, effervescing with diluted Hydrochloric Acid, and forming a solution with which Perchloride of Platinum gives a yellow precipitate. Loses about 16 per cent. of its weight when exposed to a red heat in a platinum spoon. When super-saturated with Nitric Acid, and evaporated to dryness, the residue is almost entirely soluble in water, and the solution is not precipitated by Chloride of Barium or Nitrate of Silver. 83 grains require for neutralization at least 980 grain measures of the volumetric solution of Oxalic Acid.

Preparations.—Solution in distilled water for 1^x. Trituration.

Distilled water to which 5 per cent. of rectified spirit has been added is used for 1; 3^x is prepared with proof spirit, 2 with 20 O.P., and all above with rectified spirit.

Proper forms for dispensing.—1^x *and* 1, *Solution; or* 1^x *to* 3, *Trituration.* 3^x *and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

KALI CHLORICUM.

Contractions.—Kali-chl. K-cl.

Synonym.—Potassæ Chloras.

Present name.—Potassic Chlorate. $KClO_3$.

Chlorate of Potash. German, *Chlorsaures Kali;* French, *Chlorate de potasse;* Italian, *Clorato di potassa.*

Obtained by the action of Chlorine gas on a mixture of Carbonate of Potash and slaked Lime, and purified by repeated crystallization.

Characters and Tests.—In colourless rhomboidal crystalline plates, with a cool saline taste, sparingly soluble in cold water. It explodes when triturated with Sulphur. Its solution is not affected by Nitrate of Silver, or Oxalate of Ammonia. By heat it fuses, gives off oxygen gas, and leaves a white residue, readily forming with water a neutral solution, which is precipitated white by Nitrate of Silver, and yellow by Perchloride of Platinum.

Preparations.—Trituration. Solution in distilled water 1 in 20, using distilled water to which 5 per cent. of rectified spirit has been added for 1; dilute alcohol for 3^x; and rectified spirit for all above.

Proper forms for dispensing.—1^x *to* 3, *Trituration; or* 1 *in* 20, *and* 1, *Solution.* 3^x *and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

KALI IODATUM.

Contractions. Kali-i. K-hy.

Synonym.—Potassii Iodidum.

Present name.—Potassic Iodide. KI.

Iodide of Potassium. German, *Jod Kalium;* French, *Iodure de potassium;* Italian, *Ioduro di potassa.*

Prepared by the addition of Iodine to solution of Potash (*Kali causticum*) in successive small portions, with constant agitation, until the mixture has acquired a permanent brown tint. It is then mixed with vegetable charcoal and cautiously fused in an iron crucible, cooled, and purified by repeated crystallization until it answers the following

Characters and Tests.—In colourless, generally opaque, cubic crystals, readily soluble in water, and in a less degree in spirit. It commonly has a feeble alkaline reaction: its solution mixed with mucilage of Starch gives a blue colour on the addition of a minute quantity of solution of Chlorine. It gives a crystalline precipitate with Tartaric Acid. The addition of Tartaric Acid and mucilage of Starch to its watery solution does not develop a blue colour. Solution of Nitrate of Silver added in excess forms a yellowish-white precipitate, which, when agitated with Ammonia, yields by subsidence a clear liquid in which excess of Nitric Acid causes no turbidity. Its aqueous solution is only faintly precipitated by the addition of Saccharated Solution of Lime.

It should be kept in a well-stoppered bottle.

Preparation.—Solution in dilute alcohol for 1^x, using rectified spirit for 1 and upwards.

Proper forms for dispensing.—1^x, *Solution only.* 1 *and upwards, Tincture, Pilules, or Globules.*

KALI NITRICUM.

Contractions.—Kali-n., or Nitr. Nit.

Synonyms.—Nitrum. Potassæ Nitras.

Present name.—Potassic Nitrate. KNO_3.

Nitre, Saltpetre, or Nitrate of Potash. German, *Salpeter*; French, *Salpêtre*; Italian and Spanish, *Nitro.*

The commercial salt, purified by solution in distilled water and re-crystallization.

Characters and Tests.—In white crystalline masses or fragments of striated six-sided prisms, colourless, of a peculiar cool saline taste. Thrown on the fire, it deflagrates; warmed in a test-tube with Sulphuric Acid and copper wire, it evolves ruddy fumes. Its solution acidulated with Hydrochloric Acid gives a yellow precipitate with Perchloride of Platinum. Its solution is not affected by Chloride of Barium or Nitrate of Silver.

Preparations.—Trituration. Solution in distilled water for 1^x, using dilute alcohol for 1, and rectified spirit for 3^x and upwards.

Proper forms for dispensing.—1^x *to* 3, *Trituration; or* 1^x, *Solution.* 1 *and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

KALMIA.

Contractions.—Kalm. Klm.

Kalmia latifolia, *Linn.* *Nat. ord.*, ERICACEÆ.

Synonyms.—Camædaphne foliis tini, Ledum floribus bullatis, Cistus chamærhododendros.

Fig.—Bigelow, Am. Med. Bot., pl. 13.

Mountain Laurel, Lambkill, Spoonwood, Calico Bush. German, *Löffelbaum.*

Habitat.—New Hampshire, Massachusetts; Alleghany Mountains.

Flowering time.—Spring months.

Parts employed.—The leaves.

Characters.—Shrub, sometimes a small tree. *Leaves* evergreen, coriaceous, very smooth, with the under-side paler, oval, acute, and entire; inserted by scattered petioles on sides and extremities of branches. *Flowers* vary from white to red; grow in terminal corymbs.

Time for collecting.—While in flower.

Preparation. — Tincture, corresponding in alcoholic strength with proof spirit. Process I.

Proper forms for dispensing.—*ϕ and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

KREASOTUM.

Contractions.—Kreas. Kre.

Synonym.—Creasotum.

Kreasote or Creasote.

The exact composition of this is unknown. Formerly much of the kreasote of commerce was carbolic acid, but Reichenbach's kreasote is a distinct substance obtained by the distillation of wood tar. It bears the following

Characters and Tests. — A liquid, colourless, or with a yellowish tinge, and a strong empyreumatic odour. It is sparingly dissolved by water, but freely by alcohol, ether, and Glacial Acetic Acid, insoluble in glycerine. Specific gravity 1·071. It coagulates albumen. A slip of deal dipped into it and afterwards into Hydrochloric Acid, acquires on exposure for a short time to the air, a greenish-blue colour Dropped on white filtering paper and exposed to a heat of 212°, it leaves no translucent stain. It turns the plane of polarization of a ray of polarized light to the right. It is not solidified by the cold produced by a mixture of Hydrochloric Acid and Sulphate of Soda.

Preparation.—Solution in rectified spirit, forming the 1^x attenuation.

Proper forms for dispensing.—1^x *and upwards, Tincture, Pilules, or Globules.*

LACHESIS.

Contractions.—Lach. Lah.

Trigonocephalus Lachesis ?

Class, REPTILIA ; *Section,* SQUAMATA; *Order,* OPHIDIA; *Sub-order,* VIPERINÆ ; *Fam.,* CROTALIDÆ.

Lance-headed Viper ?

Part employed.—The venom.

The specimen used by Dr. Constantine Hering in his experiments was obtained from the living snake, which was stunned with a blow ; the poison was then collected on sugar by pressing the poison fang upwards against the bag; and this is, up to the present time, the only reliable source. In seeking a fresh supply it might be secured in the manner described under *Crotalus.* Its lowest attenuations should be tested upon some small animals, and if its subcutaneous injection did not produce distinct symptoms of poisoning, it should be rejected as untrustworthy.

Characters.—Much difficulty exists in identifying the exact species referred to by Hering. Büchner mentions three species—viz., *Trigonocephalus Lachesis*, *T. atrox*, and *T. lanceolatus.* The habitation, however (South America), and the general description agree best with the *Lachesis mutus* or *Curucucu*, while the name *Lance-headed Viper* would refer it to the *Craspedocephalus lanceolatus* or *Fer-de-lance,* a well-known and extremely poisonous snake of the Brazils. For every reason, therefore, it is desirable to use Hering's original preparation, with which the provings were made.

Preparations.—Attenuations made from the original supply with rectified spirit. Solution in glycerine, and subsequent attenuation in the same manner as *Crotalus,* should a fresh supply be obtained.

Proper forms for dispensing.—6 *or upwards, Tincture, Pilules, or Globules, until a fresh supply can be obtained.*

LACTUCA.

Contractions.—Lact-v. La-v.

Lactuca virosa, *Linn.* *Nat ord.*, COMPOSITÆ.

Fig.—E. B., t. 1957.

Strong-scented Lettuce. German, *Giftiger Lattich;* French, *Laitue vireuse.*

Habitat.—Banks and waysides, especially on a chalky soil; common in England.

Flowering time.—June to August.

Parts employed.—The entire fresh plant.

Characters.—A biennial herb, full of acrid milky juice. *Stem* 2 to 4 feet high, erect, round, branched above, panicled. *Leaves* horizontal, oblong, auricled, and clasping, prickly on the keel, mucronate-dentate or sinuate. *Flowers* yellow. *Heads* scattered; bracts cordate, acute. *Fruit* striated; beak about as long as the black fruit.

Time for collecting.—When in flower.

Preparation. — Tincture, corresponding in alcoholic strength with proof spirit. Process I.

Proper forms for dispensing.—*ϕ and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

Average loss of moisture, 74 per cent.

LAMIUM.

Contraction.—Lam.

Lamium album, *Linn.* *Nat. ord.*, LABIATÆ.

Synonyms.—L. vulgatum, L. lævigatum, L. maculatum.

Fig.—E. B., 768.

Dead Nettle. German, *Weissbienensaug, Weisse Taubnessel;* French, *Ortie blanche.*

Habitat.—Borders of fields and waste places throughout Europe and Russian Asia; abundant.

Flowering time.—Spring and summer.

Parts employed.—The fresh herb.

Characters. — *Leaves* cordate, acuminate, deeply serrate, stalked; *calycine* teeth long, subulate, always spreading. *Corolla* with tube curved upwards, having within a hairy ring, the throat dilated, upper lip oblong, lateral lobes of lower lip with 1 to 3 subulate teeth.

Time for collecting.—While in flower and seed.

Preparation. — Tincture, corresponding in alcoholic strength, with proof spirit. Process I.

Proper forms for dispensing.—*ϕ and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

LAUROCERASUS.

Contractions.—Lauro. Lau.

Prunus Laurocerasus, *Linn.* *Nat ord.*, ROSACEÆ.

Synonyms.—Padus Laurocerasus, Cerasus folio laurino.

Fig.—Flora Hom., pl. 39.

Common Cherry Laurel. German, *Kirsch-Lorbeer;* French, *Laurier-cérise;* Italian, *Lauro regio;* Spanish, *Laurel real.*

Habitat.—Persia and Asia Minor. Cultivated as an evergreen in all our gardens.

Flowering time.—Spring.

Parts employed.—The mature fresh leaves.

Characters.—*Leaves* ovate-lanceolate or elliptical, distantly toothed, furnished with glands at the base, smooth and shining, deep green, on strong short foot-stalks, emitting a ratafia odour when bruised.

Time for collecting.—August.

Preparation. — Tincture, corresponding in alcoholic strength with proof spirit. Process I.

Proper forms for dispensing:—*ϕ and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

Average loss of moisture, 66 per cent.

LEDUM.

Contraction.—Led.

Ledum palustre, *Linn.* *Nat. ord.*, ERICACEÆ.

Synonyms. — Rorismarinum sylvestre, Ledum Silesiacum.

Fig.—Flora Hom., pl. 40.

Silesian Rosemary, Wild Rosemary, Marsh Ledum, Marsh Tea. German, *Wilder Rosmarin, Sumpfporst, Porsch;* French, *Romarin Sauvage;* Italian, *Ledo;* Spanish, *Ledo.*

Habitat.—Moist swampy ground in North of Europe France, Asia, and America.

Flowering time.—April to July.

Parts employed.—The small twigs and leaves.

Characters.—A small evergreen shrub. *Stem* shrubby, erect, slender, much branched, young branches covered with close rust-coloured down. *Leaves* scattered, horizontal or reflexed, on short petioles, strap-shaped, quite entire, with revolute margins, channelled, smooth; upper surface dark green, under surface paler, and the mid-rib covered with rust-coloured down. *Flowers* numerous in dense, simple, terminal, bracteated corymbs. The whole plant when bruised, has a strong, oppressive, aromatic odour, and a bitter, astringent, nauseous taste.

Time for collecting.—Soon after flowering begins.

Preparation. — Tincture, using rectified spirit. Process I.

Proper forms for dispensing.—*ϕ and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

LEPTANDRA.

Contractions.—Lept. Lpt.

Leptandra Virginica, *Nutt.* *Nat. ord.*, SCROPHULARIACEÆ.

Synonym.—Veronica V. *(Linn.)*

Fig.—Comm. Got., pl. 15, vol. v.

Black Root, Culver's Physic, Tall Speedwell.

Habitat.—Throughout the United States.

Flowering time.—July and August.

Part employed.—The root.

Characters.—A perennial plant, with a simple, straight, smooth, herbaceous *stem* from 2 to 5 feet in height. *Leaves* whorled in fours to sevens, short petioled, lanceolate, acuminate, finely serrate. *Flowers* white, numerous, nearly sessile, and disposed in long, terminal, and verticillate and subterminal spikes. Spikes panicled, crowded; bracts very small. Calyx four-parted. Corolla small, with a deeply four-cleft spreading border, the lateral or lower segments narrower than the others, tubular, pubescent inside; tube of the corolla longer than its limb, and much longer than the calyx. Stamens 2, very much exserted. *Capsule* oblong ovate, not notched, opening by 4 teeth at the apex, many-seeded. *Root* horizontal, irregular, woody, about as thick as the finger, from 6 to 12 inches long, blackish externally, brownish internally, with many long, slender, dark fibres issuing horizontally in every direction. It has a faint odour, and a bitter, nauseous taste.

Time for collecting.—Early spring or late autumn.

Preparations.—Tincture of the fresh root, prepared in and imported from North America. Trituration of the dry root. Trituration of the resinoid known as *Leptandrin.*

Proper forms for dispensing.—*ϕ and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

Dried root, or Leptandrin.—1^x to 3, *Trituration.*

LILIUM TIGRINUM.

Contractions.—Lil-t. Lil.

Lilium tigrinum, *H.K.* *Nat. ord.*, Liliaceæ.

Fig.—Bot. Mag., pl. 1237.

The Tiger Lily. German, *Tiger Lillie.*

Habitat.—China and Japan. Much cultivated as a garden plant.

Flowering time.—July and August.

Parts employed.—The stalks, leaves and flowers.

Characters.—*Stem* 4 to 6 feet high, unbranched and woolly. *Leaves* scattered, sessile, three-veined, the upper cordate-ovate ; the axils bulbiferous. *Flowers* large, in a pyramid at the summit of the stem, dark orange-coloured, with black or very deep crimson, somewhat raised spots.

Time for collecting.—August, or when the plant is in full maturity.

Preparation.—Tincture, corresponding in alcoholic strength with dilute alcohol. Process I.

Proper forms for dispensing.—*φ and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

Average loss of moisture 90 per cent.

LITHIUM CARBONICUM.

Contractions.—Lith. Lth.

Synonym.—Lithiæ Carbonas.

Present name.—Lithic Carbonate. Li_2CO_3.

Carbonate of Lithia.

Prepared by dissolving the commercial salt in very dilute Hydrochloric Acid and precipitating the solution by Carbonate of Ammonia.

Characters and Tests.—In white powder or in minute crystalline grains, alkaline in re-action, soluble in 100 parts of cold water, insoluble in alcohol. It dissolves with effervescence in Hydrochloric Acid; and the solution evaporated to dryness leaves a residue of Chloride of Lithium, which communicates a red colour to the flame of a spirit lamp, and, re-dissolved in water, yields a precipitate with Phosphate of Soda. 10 grains of the salt neutralized with Sulphuric Acid and afterwards heated to redness, leave 14·86 grains of dry Sulphate of Lithia, which, when re-dissolved in distilled water, yields no precipitate with Oxalate of Ammonia or solution of Lime.

Preparation.—Trituration.

N.B.—A saturated solution in distilled water is suggested to form the 1 attenuation.

Proper forms for dispensing.—1^x *to* 3, *Trituration only.* 4 *and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

LOBELIA INFLATA.

Contractions.—Lobel. Lo-i.

Lobelia inflata, *Linn.* *Nat. ord.*, LOBELIACEÆ.

Fig.—Bigelow, Amer. Med. Bot., fig. 19.

Indian Tobacco.

Habitat.—Fields and roadsides from Canada to Southern States.

Flowering time.—From midsummer till autumn.

Parts employed.—The whole plant.

Characters.—An annual or biennial herb, varying from 6 inches to 2 or 3 feet high. *Root* fibrous. *Stem* erect, in the full-sized plant much branched, angular, hairy. *Leaves* scattered, sessile, oval, serrate, veiny and hairy. *Flowers* in spikes and racemes, pedunculated ; corolla bluish purple. *Capsule* ovoid, inflated, ten-ribbed. *Seeds*, numerous, small, oblong, brown. The stem when broken, emits a milky juice. Dried herb acrid.

Time for collecting.—When in flower and seed.

Preparation. — Tincture, corresponding in alcoholic strength with proof spirit. Process I.

N.B.—It has been proposed to prepare this with ether, from the dried plant.

Proper forms for dispensing.—*ϕ and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

LYCOPODIUM.

Contractions.—Lycop. Lyc.

Lycopodium clavatum, *Linn.* *Nat. ord.*, LYCOPODIACEÆ.

Synonyms.—Muscus terrestris repens, Pes ursinus.

Fig.—Flora Hom., pl. 41.

Club Moss, Wolf's claw. German, *Gemeiner Bärlapp, Kolbenmoos;* French, *Pied de Loup, Lycopode;* Italian and Spanish, *Licopodio.*

Habitat.—Hilly pastures and heaths in Central and Northern Europe, Russian Asia, and North America. Common in Great Britain, especially in the north.

Fruiting time.—Summer and autumn.

Parts employed.—The spores, wrongly called pollen or seeds.

Characters.—An extremely fine pale yellow powder, unctuous to the touch, tasteless, inodorous, inflammable, swims on water, and cannot be wetted without great difficulty.

Time for collecting.—Summer and autumn.

Preparation.—Trituration. Tincture also is prepared, but it is doubtful whether it possesses all the virtues of the drug.

Proper forms for dispensing.—1^x *to* 3, *Trituration only.* 4 *and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

LYCOPUS.

Contractions.—Lyc.-Vir. Lcp.

Lycopus Virginicus, *Michaux.* *Nat. ord.*, LABIATÆ.

Bugle Weed.

Habitat.—Throughout the greater part of the United States in shady and wet places.

Flowering time.—August.

Part employed.—The whole plant.

Characters.—*Root* perennial, creeping. *Stem* erect, nearly simple, obtusely quadrangular, 12 to 18 inches high. *Leaves* sessile, broad-lanceolate, entire at both extremities, remotely serrate in the middle, somewhat rough, purplish, and beset with glandular dots on their under surface. *Flowers* minute, in small axillary whorls with two small subulate bracts to each flower, and a white corolla, which is tubular, 4-lobed, the upper lobe rather broader and emarginate. Calyx tubular, 5 toothed, spineless; stamens 2; nuts naked, retuse. The plant has a peculiar odour, and a nauseous, slightly bitter taste.

Time for collecting.—When in flower.

Preparation. — Tincture, corresponding in alcoholic strength with dilute alcohol.

Proper forms for dispensing.—*φ and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

MAGNESIA CARBONICA.

Contractions.—Mag-c. Mag.

Synonym.—Magnesiæ Carbonas Levis.

Present name.—Magnesic Carbonate.

Light Carbonate of Magnesia. German, *Kohlensaure Magnesia;* French, *Carbonate de magnésie;* Italian, *Carbonato di magnesia;* Spanish, *Carbonato de magnesia.*

A combination of Carbonate and Hydrate of Magnesia, having the following composition: $(MgCO_3)_3.MgO.5H_2O$. It may be prepared as follows:—

Take of Sulphate of Magnesia - -	10 ounces;
Carbonate of Soda - - -	12 ounces;
Distilled Water - - -	A sufficiency.

Dissolve the sulphate of magnesia and the carbonate of soda each in half a gallon of the water, mix the two solutions cold, and boil the mixture in a porcelain dish for fifteen minutes. Transfer the precipitate to a calico filter, and pour upon it repeatedly boiling distilled water until the washings cease to give a precipitate with chloride of barium. Lastly, dry by a heat not exceeding 212°.

Characters and Tests.—A very light powder which, when examined under the microscope, is found to be partly amorphous with numerous slender prisms intermixed. Dissolves with effervescence in the diluted mineral acids, yielding solutions which when first treated with Chloride of Ammonium, are not disturbed by the addition of an excess of solution of Ammonia, but yield a copious crystalline precipitate upon the addition of Phosphate of Soda. With excess of Hydrochloric Acid, it forms a clear solution in which Chloride of Barium causes no precipitate. Another portion of the solution supersaturated with Ammonia gives no precipitate with Oxalic Acid or Sulphuretted Hydrogen. 50 grains calcined at a red heat are reduced to 22.

Preparation.—Trituration.

Proper forms for dispensing.—1^x *to* 3, *Trituration only.* 4 *and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

MAGNESIA MURIATICA.

Contractions.—Mag-m. Mg-m.

Synonym.—Magnesii Chloridum.

Present name.—Magnesic Chloride. $MgCl_2$.

Chloride of Magnesium. Muriate of Magnesia. German, *Salzsaure Magnesia;* French, *Muriate de magnésie;* Italian, *Muriato di magnesia.*

This is prepared as follows:

Take two equal parts of Hydrochloric Acid, and neutralize one part with Magnesia, the other with Ammonia;

then mix the products, evaporate, and fuse in a loosely-covered porcelain crucible, when the chloride of ammonium sublimes into the air and pure chloride of magnesium remains. Transfer to a well stoppered bottle.

Characters and Tests.—White, crystalline masses, very deliquescent, and possessing a bitter taste; entirely soluble in water and in 20 O.P. spirit. Its aqueous solution gives a white precipitate with Nitrate of Silver; and when first treated with Chloride of Ammonium, it is not disturbed by the addition of an excess of solution of Ammonia, but yields a copious crystalline precipitate upon the addition of Phosphate of Soda. With Hydrochloric Acid it forms a clear solution in which Chloride of Barium causes no precipitate. Another portion of the solution supersaturated with Ammonia gives no precipitate with Oxalic Acid or Sulphuretted Hydrogen.

Preparation.—Solution in 20 O.P. spirit for 1^x, using rectified spirit for all above.

Proper forms for dispensing.—1^x *and upwards, Tincture, Pilules, or Globules.*

MAGNESIA SULPHURICA.

Contractions.—Mag-s. Mg-s.

Synonym.—Magnesiæ Sulphas.

Present name.—Magnesic Sulphate. $MgSO_4.7H_2O$.

Sulphate of Magnesia, Epsom Salts.

German, *Schwefelsaure Magnesia;* French, *Sulfate de magnésie;* Italian, *Solfato di magnesia;* Spanish, *Sulfato de magnesia.*

The commercial salt purified by re-crystallization.

Characters and Tests.—In minute colourless and transparent rhombic prisms, possessing a bitter taste. It readily dissolves in water, and the solution gives copious white precipitates with Chloride of Barium, and with a mixed solution of Ammonia, Chloride of Ammonium, and Phosphate of Soda. Its aqueous solution at ordinary temperatures is not precipitated by Oxalate of Ammonia; nor should it give a brown precipitate with Chlorinated Lime or Soda. The precipitate given by Carbonate of Soda, when obtained from a boiling solution of 100 grains of the salt, should, when well washed, dried, and heated to redness, weigh 16·26 grains.

Preparations.—Solution in distilled water for 1^x; using dilute alcohol for 1, and rectified spirit for all above. Trituration.

Proper forms for dispensing.—1^x *and* 1, *Solution; or* 1^x *to* 3, *Trituration.* 3^x *and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

MANGANUM ACETICUM.

Contractions.—Mang. Man.

Present name. — Manganous Acetate. $Mn(C_2H_3O_2)_2.4H_2O$.

Acetate of Manganese. German, *Essigsaurer Braunstein;* French, *Acetate de manganèse;* Italian, *Acetato di manganese.*

Prepared by saturating pure Acetic Acid with Carbonate of Manganese and crystallizing.

Characters and Tests.—Light pinkish crystals in rhombic prisms, not altered by exposure to air. Taste astringent and metallic. The watery solution is not affected by Chloride of Barium but gives a flesh-coloured precipitate with Sulphide of Ammonium, and a white, but no blue precipitate upon the addition of yellow Prussiate of Potash. The crystals treated with Sulphuric Acid emit an odour of vinegar. The solution when slightly acidulated with Hydrochloric Acid is not precipitated by Sulphuretted Hydrogen.

Preparation.—Solution in distilled water for 1^x; using dilute alcohol for 1, and rectified spirit for all above.

Proper forms for dispensing.—1^x *and* 1, *Solution only.* 3^x *and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

MANGANUM CARBONICUM.

Contractions.—Mang-c. Mn-c.

Present name.—Manganous Carbonate. $MnCO_3$.

Carbonate of Manganese. German, *Kohlensaurer Braunstein;* French, *Carbonate de manganèse;* Italian, *Carbonato di manganese.*

Prepared by precipitating a solution of pure Protosulphate of Manganese with Carbonate of Soda. Collect the precipitate on a calico filter and wash with distilled water until the filtrate ceases to give a precipitate with Chloride of Barium.

Characters and Tests.—A brownish-white powder, soluble in Hydrochloric Acid with effervescence. The acid solution gives with excess of Caustic Potash a white precipitate, which becomes brown on exposure to the air, but no precipitate with Sulphuretted Hydrogen or Chloride of Barium; and when nearly neutral it yields with Sulphide of Ammonium a characteristic flesh-coloured precipitate, which is readily soluble in Hydrochloric and Nitric Acids. No *blue* precipitate is given on the addition of the yellow Prussiate of Potash.

Preparation.—Trituration.

Proper forms for dispensing.—1^x to 3, *Trituration only.* 4 *and upwards, Tincture, Tincture-trituration, Pilules or Globules.*

MENYANTHES.

Contractions.—Menyan. Men.

Menyanthes trifoliata, *Linn.* *Nat. ord.*, GENTIANACEÆ. *Fig.*—E. B., t. 495.

Buckbean, Marsh Trefoil. German, *Bitterklee, Fieberklee;* French, *Trèfle d'eau.*

Habitat.—Marshy places and boggy ground in Europe, Russian Asia, and North America; common in Great Britain.

Flowering time.—June to August.

Parts employed.—The whole plant.

Characters.—*Roots* densely matted and creeping. *Leaves* ternate, stalked; leaflets obovate, obscurely toothed. Base of leaf sheathing, whence arises a flower-stalk supporting a compound raceme or thyrsus of many white *flowers* tipped externally with red, and fringed with white filaments within.

Time for collecting.—At the commencement of flowering.

Preparation. — Tincture, corresponding in alcoholic strength with dilute alcohol. Process I.

Proper forms for dispensing.—*ϕ and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

MEPHITIS PUTORIUS.

Contractions.—Meph-p. Mep.

Class, MAMMALIA; *Order,* FERÆ; *Family,* MUSTELIDÆ; *Genus,* MEPHITIS.

The Skunk. German, *Nordamerikanisches Stinkthier;* French, *Putois d'Amerique.*

Part employed.—The secretion of the anal glands. It must be obtained in America, direct from the animal.

Characters.—The skunk is a pretty little animal with a bushy tail and a cylindrical elongated body like the ferret. When pursued it has the power of ejecting the secretion of the anal glands to some distance with considerable force; the odour of this secretion is horribly offensive and persistent.

Preparations.—Trituration. Tincture, using proof spirit.

Proper forms for dispensing.—1 *to* 3, *Trituration; or* 1 *and upwards, Tincture, Pilules, or Globules.*

MERCURIALIS.

Contractions.—Mercurial. Mrl.

Mercurialis perennis, *Linn.* *Nat. ord.*, EUPHORBIACEÆ.

Fig.—Eng. Bot., t. 1872.

Dog's Mercury. German, *Ausdauerndes Bingelkraut, Speck-melde.*

Habitat.—Woods and shady places throughout Europe and Russian Asia. Abundant in England and Scotland; very rare in Ireland.

Flowering time.—Early spring.

Parts employed.—The entire fresh plant.

Characters.—*Root-stock* slender and creeping. *Stem* erect, simple, 6 to 8 inches high. *Leaves* rather crowded in the upper part, ovate-lanceolate, 2 to 5 inches long, usually pointed, crenate or serrated, and rough or shortly hairy. *Flowers* diœcious, on slender axillary peduncles nearly as long as the leaves; the males in little clusters, the females singly or two together. *Ovaries* larger than the perianth, with rather long spreading styles. *Capsules* more or less covered with warts or soft prickles.

Time for collecting.—When in flower and fruit.

Preparation. — Tincture, corresponding in alcoholic strength with dilute alcohol. Process I.

Proper forms for dispensing.—ϕ *and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

Average loss of moisture, 84 per cent.

MERCURIUS ACETATUS.

Contractions.—Merc.-acet. Mr-a.

Present name.—Mercurous Acetate. $HgC_2H_3O_2$.

Subacetate of Mercury. German, *Essigsaures Quecksilber;* French, *Acetate de mercure;* Italian, *Acetato di mercurio.*

Prepared by adding an acid solution of a Subnitrate of Mercury to a solution of Acetate of Soda, gradually and in slight excess, and carefully washing and drying the precipitate.

Characters and Tests.—Crystalline silvery scales having an acrid metallic taste, scarcely soluble in water and Acetic Acid in the cold, but soluble in water upon heating, and depositing a grey precipitate upon cooling which contains globules of metallic Mercury. Digested with solution of Potash it becomes black. It is entirely volatilized by a sufficient heat, giving off acetic vapours.

Preparation.—Trituration.

Proper forms for dispensing.—1^x *to* 3, *Trituration only.* 4 *and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

MERCURIUS BINIODATUS.

Contractions.—Merc-biniod. Mr-b.

Synonyms.—Mercurii Biniodidum, Mercurius Iodatus Ruber, Hydrargyri Iodidum Rubrum.

Present name.—Mercuric Iodide. HgI_2.

Red Iodide of Mercury. German, *Doppelt Jodquecksilber;* French, *Iodure rouge de mercure;* Italian, *Ioduro rosso di mercurio.*

This may be made as follows:—

Take of Perchloride of Mercury	- -	4 ounces;
Iodide of Potassium	- -	5 ounces;
Boiling Distilled Water	- -	6 pints.

Dissolve the perchloride of mercury in 5 pints of the water, and the iodide of potassium in the remainder, and mix the solutions thoroughly. Having allowed the mixture to cool, collect the precipitate on a calico filter, wash it thoroughly with distilled water, and dry on a water-bath.

Characters and Tests.—A fine crystalline powder of a vermilion colour, becoming yellow when gently heated over a lamp on a sheet of paper; almost insoluble in water, dissolves sparingly in alcohol, but freely in ether or in an aqueous solution of Iodide of Potassium. When digested with solution of Soda it assumes a reddish-brown colour, and the fluid, cleared by filtration and mixed with solution of Starch, gives a blue precipitate on being acidulated with Nitric Acid. Entirely volatilized by a heat under redness.

Preparation.—Trituration.

Proper forms for dispensing.—1^x to 3, *Trituration only.* 4 *and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

MERCURIUS CORROSIVUS.

Contractions.—Merc-corr. Mr-c.

Synonyms.—Mercurius Corrosivus Sublimatus, Hydrargyri Perchloridum.

Present name.—Mercuric Chloride. $HgCl_2$.

Corrosive Sublimate. Perchloride of Mercury. German, *Aetzsublimat;* French, *Sublimé corrosif.*

Prepared by subliming a mixture of Sulphate of Mercury and dried Chloride of Sodium, and re-crystallizing the product from solution in water.

Characters and Tests. — In heavy, colourless prismatic crystals, possessing a highly acrid, metallic taste; more soluble in alcohol, and still more so in ether, than in water. Its aqueous solution gives a yellow precipitate with Caustic Potash, a white precipitate with Ammonia, and a curdy white precipitate with Nitrate of Silver. When heated it sublimes without decomposing, or leaving any residue.

Preparations.—Trituration. Solution in rectified spirit.

Proper forms for dispensing. — 1^x *to* 3, *Trituration; or* 1^x *and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

MERCURIUS DULCIS.

Contractions.—Merc-dulc. Mr-d.

Synonyms.—Hydrargyri Subchloridum, Calomelas.

Present name.—Mercurous Chloride. HgCl.

Subchloride of Mercury. Calomel. German, *Versüsstes Quecksilber;* French, *Mercure doux;* Italian, *Calomelano.*

May be prepared by triturating together 10 parts of Sulphate of Mercury, 7 parts of metallic Mercury and 5 parts of dry Chloride of Sodium, subliming the mixture and washing the powder with boiling distilled water on a calico filter, until the filtrate ceases to be darkened by a drop of sulphide of ammonium. It should be kept in amber glass bottles.

Characters and Tests. — A dull-white, heavy, and nearly tasteless powder, rendered yellowish by trituration in a mortar; insoluble in water, spirit, or ether. Digested with solution of Potash, it becomes black; and the clear solution, acidulated with Nitric Acid, gives a copious white precipitate with Nitrate of Silver. Contact with Hydrocyanic Acid also darkens its colour. It is entirely volatilized by a sufficient heat. Warm ether which has been shaken with it in a bottle leaves on evaporation no residue. If ten grains be placed on a filter and repeatedly washed with two fluid drachms of distilled water, the filtrate is not darkened by a drop of Sulphide of Ammonium.

Preparation.—Trituration.

Proper forms for dispensing.—1^x to 3, *Trituration only.* 4 *and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

MERCURIUS IODATUS.

Contractions.—Merc-iod. Mr-i.

Synonyms.—Mercurii Iodidum, Mercurius Iodatus Flavus, M. Protoiodatus, Hydrargyri Iodidum Viride.

Present name.—Mercurous Iodide. HgI.

Green Iodide of Mercury. German, *Quecksilberjodür;* French, *Iodure vert de mercure;* Italian, *Ioduro giallo di mercurio.*

This may be prepared in the following way:—

Take of Mercury by weight - -	1 ounce;
Iodine - - - - -	278 grains;
Rectified spirit - - -	A sufficiency.

Rub the iodine and mercury in a Wedgwood mortar, occasionally moistening the mixture with a few drops of the spirit, and continue the trituration until metallic globules are no longer visible, and the whole assumes a green colour. The product thus obtained should be dried in a dark room, on filtering-paper, by simple exposure to the air, and preserved in an amber glass bottle.

Characters and Tests.—A dull-green powder, insoluble in water, which darkens in colour upon exposure to light. When it is shaken in a tube with ether nothing is dissolved. Gradually heated in a test tube, it yields a yellow sublimate, which, upon friction, or after cooling, becomes red, while globules of metallic Mercury are left in the bottom of the tube.

Preparation.—Trituration.

Proper forms for dispensing.—1^x to 3, *Trituration only.* 4 *and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

MERCURIUS SOLUBILIS.

Contractions.—Merc. Mer.

Synonym.—Mercurius Solubilis Hahnemanni.

Present name.—Dimercurosammonium Nitrate. $2(NH_2Hg_2)NO_3.H_2O$.

Hahnemann's Soluble Mercury. German, *Hahnemann's auflösliches Quecksilber;* French, *Mercure soluble de Hahnemann;* Italian, *Mercurio solubile.*

This preparation has an historical interest, as it was discovered by Hahnemann. His process for making it is needlessly complex, and it is difficult to insure any two consecutive preparations being alike.

The process recommended by Hahnemann is as follows:—

"Having purified the mercury, it is dissolved cold, in common nitric acid, which requires many days; the salt which results is dried on blotting-paper, and triturated in a glass mortar for half an hour, adding one-fourth of its weight of the best alcohol. The alcohol which has been converted into ether is thrown aside, and the trituration of the mercurial is continued with fresh alcohol, for half an hour each time, until this fluid no longer has the smell of ether. That being done, the alcohol is decanted, and the salt dried on blotting-paper, which is renewed from time to time. Afterwards it is triturated for a quarter of an hour, in a glass mortar, with twice its weight of distilled water; the clear fluid is decanted, the salt is again washed by a second trituration with a fresh quantity of water, the clear fluid is united to the preceding, and thus we have the aqueous solution of all that the saline mass consisting of mercurial nitrate really saturated. The residuum is composed of other mercurial salts, of chloride and sulphate. Finally, this aqueous solution precipitates, by caustic ammonia, the so-called *Black Oxide of Mercury (Blackish-grey Oxidule of Mercury).*"

In order to obtain uniformity in the preparation of this substance the following formula is suggested:

Take of Mercury, by weight - -	3 ounces;
Nitric Acid - - -	13 fluid drachms;
Strong Solution of Ammonia	½ a fluid ounce;
Distilled Water - -	A sufficiency.

Mix the nitric acid with 8 fluid ounces of the water in a flask, and digest the mercury in the mixture, applying a gradually increased heat until about 2½ ounces of the metal have dissolved, and a small portion of the solution diluted with about 20 times its bulk of distilled water, yields a perfectly black precipitate with ammonia. Dilute the hot solution with 12 fluid ounces of the water, and, while warm, filter it into a vessel containing four times its bulk of cold distilled water. Having thoroughly mixed the filtrate with the water, add the solution of ammonia, previously diluted with 10 fluid ounces of distilled water, in a thin stream, stirring constantly meanwhile; as soon as the precipitate has subsided, decant the supernatant liquid, shake the precipitate with a fresh portion of distilled water, collect it on a filter, wash thoroughly and dry it between folds of filtering paper without the aid of heat.

Characters and Tests. — A heavy greyish black powder possessing a slight, somewhat acrid metallic taste ; insoluble in water, alcohol or ether. Heated gently in a test tube it becomes yellow and gives off moisture. It is entirely volatilized by a heat under redness and at the same time decomposes, evolving nitrous fumes. Ten grains boiled gently with Caustic Potash give off sufficient Ammonia to restore the blue colour to moistened red litmus paper placed over the mouth of a tube, the inside of which has been previously wiped dry and carefully closed with a piece of filtering paper. It contains no metallic globules.

Preparation.—Trituration.

Proper forms for dispensing.—1^x to 3, *Trituration only.* 4 *and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

MERCURIUS SULPHURATUS RUBER.

Contractions.—Merc.-s.-r. Cinnab. Cnb.

Synonym.—Cinnabaris.

Present name.—Mercuric Sulphide. HgS.

Vermilion. Cinnabar. German, *Zinnaber, Schwefel Quecksilber ;* French, *Cinnabre, Sulfure rouge de mercure.*

Prepared by sublimation of a mixture of 6 parts of metallic Mercury and 1 part of the Flowers of Sulphur.

Characters and Tests.—A heavy powder of a splendid red tint intermediate between crimson and scarlet, insoluble in Hydrochloric or Nitric Acid separately but soluble in a mixture of the two acids, with separation of spongy flakes of Sulphur. It is without odour and almost tasteless, and does not undergo change in the air. When gently heated it assumes a dull brownish-red colour, which, if the heat be continued, becomes nearly black, but recovers its red colour on cooling. At a higher temperature it takes fire if exposed to the air, but in a tube it sublimes unchanged and without residue. If ignited with fixed alkalies or their carbonates, metallic Mercury sublimes.

Preparation.—Trituration.

Proper forms for dispensing.—1^x *to* 3, *Trituration only.* 4 *and upwards, Tincture, Tincture-trituration, Pilules or Globules.*

MERCURIUS VIVUS.

Contractions.—Merc-v. Mr-v.

Synonym.—Hydrargyrum.

Metallic Mercury, Quicksilver. Hg.

German, *Quecksilber;* French, *Mercure, Vif argent;* Italian, *Mercurio;* Spanish, *Azógue.*

Prepared by heating the native sulphide in an iron retort with lime or scraps of iron and condensing the vapour in a receiver partly filled with water. It may be purified by digesting it for some days with diluted Nitric acid in the cold; it should be placed in a shallow dish, so as to expose a large surface to the acid, and frequently agitated, and finally, washed with distilled water and dried.

Characters and Tests.—A metal, fluid at common temperatures, brilliantly lustrous, and easily divisible into spherical globules. Volatilises at a heat below that of redness, leaving no residue.

Preparation.—Trituration.

Proper forms for dispensing.—1^x *to* 3, *Trituration only.* 4 *and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

MEZEREUM.

Contraction.—Mez.

Daphne mezereum, *Linn.* *Nat ord.*, THYMELACEÆ.

Synonyms.—Chamælia Germanica, Daphnoides, Thymelæa.

Fig.—Flora Hom., pl. 42.

Common Mezereon, Spurge Olive. German, *Seidelbast, Kellerhalls;* French, *Lauréole Gentile;* Italian, *Laureola femina, Biondella;* Spanish, *Laureola hembra.*

Habitat.—In hilly woods over nearly the whole of Europe and Russian Asia.

Flowering time.—February and March.

Part employed.—The bark.

Characters.—A smooth, erect shrub, 2 to 4 feet high, with erect branches, each terminated by a tuft of narrow oblong, or lanceolate, deciduous leaves about 2 or 3 inches long. Before these leaves are fully out in spring the purple, sweet-scented flowers appear in clusters of 2 or 3 along the preceding year's shoots. It is thus distinguished from the evergreen *Daphne Laureola*, with axillary, scentless, green flowers, frequently supplied in its stead by herbalists.

Time for collecting.—Before flowering.

Preparation. — Tincture, corresponding in alcoholic strength with 20 O.P. spirit. Process I.

Proper forms for dispensing.—ϕ *and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

Average loss of moisture, 66 per cent.

MILLEFOLIUM.

Contractions.—Millef. Mil.

Achillea Millefolium, *Linn.* *Nat. ord.*, COMPOSITÆ.

Fig.—Eng. B., t., 758.

Milfoil, Yarrow. German, *Schaafgarbe*; French, *Herbe au charpentier*; Italian, *Millefoglie*; Spanish, *Cientoenrama.*

Habitat.—In pastures, meadows, and waste places all over Europe and Russian Asia, and a great part of North America. Extremely common in England.

Flowering time.—The whole summer.

Parts employed.—The entire plant.

Characters.—*Root-stock* perennial, creeping underground, with numerous short, leafy, barren branches. *Flowering stems* erect, almost simple, about a foot high. *Leaves* oblong or linear in their outline, but finely cut into numerous short, very narrow, deeply pinnatifid segments. *Flower-heads* numerous, small, ovoid, in a dense terminal corymb. *Florets* of the ray seldom above 5 or 6 in each head, white or pink.

Time for collecting.—In June and July.

Preparation. — Tincture, corresponding in alcoholic strength with proof spirit. Process I.

Proper forms for dispensing.—*ϕ and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

Average loss of moisture, 67 per cent.

MOSCHUS.

Contractions.—Mosch. Msc.

Moschus moschiferus, *Linn.* *Class,* MAMMALIA; *Order* UNGULATA; *Family,* BOVIDÆ; *Tribe,* MOSCHINA.

The Musk Deer. Musk. German, *Bisam;* French, *Musc;* Italian, *Muschio;* Spanish, *Almizcle.*

Habitat.—Central Asia.

Part employed.—The inspissated and dried secretion of the preputial follicles, imported from China and India.

Characters.—In irregular reddish-black, rather unctuous grains, having a strong, peculiar, very diffusible odour, and a bitter aromatic taste; contained in a round or slightly oval membranous sac, about 2 inches in diameter, covered on the outer side with stiff greyish hairs arranged in a concentric manner around its central orifice.

N.B.—Great care is necessary in ascertaining that the sample is genuine, as imitation sacs are sometimes made out of the skin of the animal, and the musk itself is adulterated with such things as dried blood, the dung of birds, wax, &c. If the sacs are obtained, they should present no evidence of having been opened.

Preparations.—Trituration. Tincture, 1 in 20, using rectified spirit. Process I.

Proper forms for dispensing.—1^x *to* 3, *Trituration; or* ϕ *and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

NAJA.

Contraction.—Naj.

Naja tripudians. *Class,* REPTILIA; *Section,* SQUAMATA; *Order,* OPHIDIA; *Sub-order,* COLUBRINÆ; *Family,* ELAPIDÆ.

Cobra de Capello. Hooded Snake.

Habitat.—Commonly found in Hindostan.

Part employed.—The venom.

Characters of Venom, Pure.—An amber-coloured, syrupy, frothy liquid; sp. gr. varying from 1·046 to 1·095. Evaporated to dryness it leaves a residue amounting on the average to about 30 per cent. The liquid poison, treated with strong alcohol, yields a precipitate of albuminous matter which is only slightly poisonous, whereas the portion soluble in alcohol is excessively poisonous, and contains the active principle—*Cobric Acid.*

Characters of Solid Residue.—A yellow, acrid, pungent powder which is not decomposed at 212° but blackens at a much higher temperature yielding a sublimate. A similar substance, crystallizing in needles, may be obtained by dialysing the liquid poison.

Characters of Species.—The Cobra varies in length from 2 to 6 feet. The neck can be dilated so as to give the appearance of a hood covering the head. It is the snake usually employed by the snake charmers. The fangs are canaliculated, and are in front of the superior maxillæ, with smaller solid teeth behind them. The sixth upper labial scale is small, forming a suture with a very large temporal scale; there is generally a spectacles-like mark on the neck.

Collection.—The venom must be collected as explained under the head of *Crotalus.*

Preparation.—Solution in glycerine, and subsequent attenuation in the same manner as *Crotalus.*

Proper forms for dispensing.—*Below* 6, *Solution only.* 6 *and upwards, Tincture, Pilules, or Globules.*

NATRUM CARBONICUM.

Contractions.—Natr-c. Nat.

Synonym.—Sodæ Carbonas.

Present name.—Sodic Carbonate. $Na_2CO_3.10H_2O$.

Carbonate of Soda. German, *Laugensalz, Sodasalz;* French, *Carbonate de soude;* Italian, *Carbonato di soda;* Spanish, *Carbonato de soda.*

The common soda of the shops, purified by solution in distilled water and re-crystallization.

Characters and Tests.—In transparent, colourless, laminar crystals of a rhombic shape, efflorescent, with a harsh alkaline taste and strong alkaline reaction. It imparts a yellow colour to flame, and dissolves with effervescence in diluted Hydrochloric Acid, forming a solution which does not precipitate with Perchloride of Platinum. By heat it undergoes aqueous fusion, and then dries up, losing 63 per cent. of its weight. When supersaturated with Nitric Acid it precipitates only slightly with Chloride of Barium or Nitrate of Silver. 143 grains require for neutralization at least 960 grain measures of the volumetric solution of Oxalic Acid.

Preparations.—Trituration. Solution in distilled water for 1^x, dilute alcohol for 1, 20 O.P. spirit for 3^x, and rectified spirit for all above.

Proper forms for dispensing.—1^x *to* 3, *Trituration; or* 1^x *and* 1, *Solution.* 3^x *and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

NATRUM MURIATICUM.

Contractions.—Natr-m. Na-m.

Synonym.—Sodii Chloridum.

Present name.—Sodic Chloride. NaCl.

Chloride of Sodium. German, *Kochsalz;* French, *Chlorure de sodium;* Italian, *Chloruro di sodio;* Spanish, *Sal.*

Common salt, purified by solution in distilled water and re-crystallization.

Characters and Tests.—In small white crystalline grains, or transparent cubic crystals, free from moisture, has a purely saline taste, imparts a yellow colour to flame, is soluble in water. The solution is not precipitated by Perchloride of Platinum, but gives with Nitrate of Silver a white precipitate soluble in Ammonia, but insoluble in Nitric Acid.

Preparations.—Trituration. Solution in distilled water for 1^x, 20 O.P. spirit for 1, and rectified spirit for all above.

Proper forms for dispensing. — 1^x *to* 3, *Trituration; or* 1^x, *Solution.* 1 *and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

NATRUM NITRICUM.

Contractions.—Natr-n. Na-n.

Synonym.—Sodæ Nitras.

Present name.—Sodic Nitrate. $NaNO_3$.

Nitrate of Soda. Cubic Nitre. German, *Salpetersaures Natron;* French, *Nitrate de soude;* Italian, *Nitrato di soda.*

Prepared from the native salt by solution in distilled water and re-crystallization.

Characters and Tests.—In colourless obtuse rhombohedral crystals, having a cooling saline taste. Thrown on the fire, it deflagrates; warmed in a test tube with Sulphuric Acid and copper wire, it evolves ruddy fumes. It is soluble in about 2 parts of cold distilled water. The solution gives no precipitate with Nitrate of Silver or Chloride of Barium.

Preparations.—Trituration. Solution in distilled water for 1^x, rectified spirit may be used for all above.

Proper forms for dispensing.—1^x *to* 3, *Trituration; or* 1^x, *Solution.* 1 *and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

NATRUM SULPHURICUM.

Contractions.—Natr.-s. Na.-s.

Synonym.—Sodæ Sulphas.

Present name.—Sodic Sulphate. $Na_2SO_4.10H_2O$.

Glauber's Salt. Sulphate of Soda. German, *Glaubersalz;* French, *Sulfate de soude;* Italian, *Sulfato di soda;* Spanish, *Sal de Glaubero.*

The commercial salt purified by solution in distilled water and re-crystallization.

Characters and Tests.—In transparent oblique prisms; has a salt and bitter taste; effloresces on exposure to the air; soluble in water, insoluble in alcohol. Exposed to heat in a porcelain crucible, it loses 55·9 per cent. of water. Heated with solution of Potash, no odour of Ammonia is evolved, and no precipitate is formed. Imparts a yellow colour to flame. 100 grains of it dissolved in distilled water and acidulated with Hydrochloric Acid, give by the addition of Chloride of Barium a white precipitate, which, when it has been washed and dried, weighs 72·2 grains.

Preparations.—Trituration. Solution in distilled water for 1^x, dilute alcohol for 1, 20 O.P. spirit for 3^x, and rectified spirit for all above.

Proper forms for dispensing.—1^x *to* 3, *Trituration; or,* 1^x *and* 1, *Solution.* 3^x *and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

NICCOLUM CARBONICUM.

Contractions.—Nicc. Nic.

Present name.—Nickel Carbonate. $NiCO_3$.

Carbonate of Nickel. German, *Kohlensaures Nickel;* French, *Nikel carbonaté;* Italian, *Carbonato di nichelio.*

Precipitated as a crystalline powder by pouring a dilute solution of chemically pure Nitrate of Nickel into a large excess of a solution of Bi-carbonate of Soda, collecting the precipitate, washing and drying.

Characters and Tests.—A pale greyish green powder, which dissolves with effervescence and without residue in dilute Hydrochloric Acid, and produces an emerald-green solution which is not precipitated by Chloride of Barium or Sulphuretted Hydrogen, but when nearly neutral, gives a black precipitate with yellow Sulphide of Ammonium, an excess of which partially re-dissolves the precipitate, forming a dirty brown solution; and a light green precipitate with Caustic Potash.

Preparation.—Trituration.

Proper forms for dispensing.—1^x *to* 3, *Trituration only.* 4 *and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

NUX JUGLANS.

Contractions.—Nux-jugl. Nx-j.

Juglans regia, *Linn.* *Nat. ord.*, JUGLANDACEÆ.

Walnut. German, *Wallnuss;* French, *Noix commune.*

Habitat.—Persia and North America. Abundantly grown in Europe.

Flowering time.—Spring.

Parts employed.—The fresh leaves or the green unripe fruit.

Characters.—*Leaves* large, alternate, pinnate, with an odd terminal leaflet, exstipulate, of a light green colour. *Fruit* a tryma, containing the well-known nut from which the tree derives its name, in an immature state. The juice of the rind stains the skin dark brown.

Time for collecting.—The leaves while the fruit is very young. The fruit in July.

Preparations.—1. Tincture of the green fruit. 2. Tincture of the leaves; corresponding in alcoholic strength with dilute alcohol in each case. Process I.

Proper forms for dispensing.—ϕ *and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

Average loss of moisture from fruit, 86 per cent.

NUX MOSCHATA.

Contractions.—Nux-m. Nx-m.

Myristica officinalis, *Linn.* *Nat. ord.*, MYRISTICACEÆ.

Synonyms.—Nux Myristica, Myristica fragrans.

Fig.—Flora Hom., pl. 43.

Nutmeg. German, *Muskatnuss;* French, *Le Muscadier;* Italian, *Noce Moscada;* Spanish, *Nuz Moscada.*

Habitat.—Molucca Islands. Cultivated in the Banda Islands of the Malayan Archipelago.

Part employed.—The kernel or common nutmeg.

Characters.—Oval or nearly round, about 1 inch in length, marked externally with reticulated furrows, internally greyish-red with dark brownish veins. It has a strong peculiar odour and a bitter aromatic taste.

Preparation.—Tincture, using rectified spirit. Process I.

Proper forms for dispensing.—ϕ *and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

NUX VOMICA.

Contractions.—Nux-v. Nx-v.

Strychnos Nux vomica, *Linn.* *Nat. ord.*, LOGANIACEÆ.

Synonym.—Nux vomica officinarum.

Fig.—Flora Hom., pl. 44.

Poison-nut. German, *Krähenaugen;* French, *Noix vomique;* Italian, *Noce vomica;* Spanish, *Mataperros.*

Habitat.—Ceylon, the East Indies, Cochin China, adjacent countries, and Islands of the Indian Archipelago.

Parts employed.—The seeds as imported.

Characters.—*Seeds* nearly circular and flat, about 1 inch in diameter, umbilicated, and slightly convex on one side; externally of an ash-grey colour, thickly covered with short satiny hairs; internally translucent, tough and horny; taste intensely bitter, inodorous.

Preparations.—Tincture, using 20 O.P. spirit. Process I. Trituration.

N.B.—As the hard, horny nature of the seed renders it extremely difficult to pulverize in a mortar, it should be first coarsely ground in a suitable mill.

Proper forms for dispensing.—1^x *to* 3, *Trituration; or* ϕ *and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

OLEANDER.

Contractions.—Oleand. Oln.

Nerium Oleander, *Linn.* *Nat. ord.*, APOCYNACEÆ.

Fig.—Flora Hom., pl. 45.

Common Rosebay. German, *Lorbeer-rose;* French, *Le Laurose;* Italian, *Oleandro;* Spanish, *Adelfa.*

Habitat.—Southern Europe and East Indies.

Parts employed.—The fresh or dry leaves of the wild plant.

Characters.—*Leaves* on short stalks, linear-lanceolate, acute, entire, smooth, coriaceous, evergreen, marked with numerous transverse ribs or veins beneath.

Time for collecting.—Just at the commencement of flowering.

Preparation. — Tincture, corresponding in alcoholic strength with proof spirit. Process I.

Proper forms for dispensing.—*ϕ and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

OLEUM ANIMALE.

Contractions.—Ol-an. Ol-a.

Synonyms.—Oleum Animale Æthereum. O. A. Dippelii.

Dippel's Animal Oil. German, *Dippelsches Thierol;* French, *Huile animale étherée.*

An empyreumatic oil obtained during the destructive distillation of bone, ivory, hair, wool, &c., and then separating the fetid oil from the other products, and purifying it by re-distillation from a mixture of the oil and four times its bulk of distilled water, repeating this latter process until a perfectly colourless liquid is produced. The chemical constitution of this substance is most complex; it contains at least all the following substances: *Methylamine, Ethylamine, Propylamine, Butylamine,* and *Amylamine; Aniline, Pyridine, Picoline, Lutidine, Pyrrol, Benzene,* and a mixture of several *Nitriles.*

Characters and Tests.—Limpid, very liquid, specific gravity 0·75, inflammable, of a disagreeable penetrating odour, and a taste, at first acrid, then bitter. It is very volatile, and usually colourless; but exposed to the light, it becomes thicker, yellow, then brownish, and at last blackish-brown and viscid. Soluble in alcohol and ether in all proportions. A drop let fall on white paper and then exposed to the air evaporates without leaving a greasy stain.

It should be kept in a well stoppered amber glass bottle.

Preparation.—Solution in rectified spirit, which forms the 1^x attenuation.

Proper forms for dispensing.—1^x *and upwards, Tincture, Pilules, or Globules.*

OPIUM.

Contraction.—Opi.

Papaver somniferum, *Linn.* *Nat. ord.*, PAPAVERACEÆ.

Synonyms.—P. sylvestre, P. sativum.

Fig.—Flora Hom., pl. 46.

White Poppy. German, *Mohnsaft;* French, *Pavot des Jardins;* Italian, *Papavero domestico;* Spanish, *Adormedera.*

Habitat.—Asia Minor, Southern Europe, and the Levant.

Part employed.—The inspissated juice, constituting the Opium of commerce.

Characters.—Irregular lumps, weighing from 4 ounces to 2 lbs., enveloped in the remains of Poppy leaves, and generally covered with the chaffy fruit of a species of Rumex. When fresh, plastic, tearing with an irregular, slightly moist chestnut-brown surface, shining when rubbed smooth with the finger, having a peculiar odour and bitter taste.

Preparations.—Trituration. Tincture, 1 in 20, using proof spirit. Process I, rubbing down the opium with three or four times its bulk of coarsely powdered glass, before packing.

Proper forms for dispensing.—1^x to 3, *Trituration; or, φ and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

N.B.—The tincture as ordered above varies from that ordered in the first edition, as it has been found that 10 parts of liquid are insufficient to exhaust the magma; it therefore differs in strength from the 1^x trituration.

PÆONIA.

Contractions.—Pæon. Pæo.

Pæonia officinalis, *Linn.* *Nat. ord.*, Ranunculaceæ.

Synonym.—Rosa Benedicta.

Fig.—Woodville's Med. Bot., vol. iv., pl. 247.

Peony. German, *Gichtrose;* French, *Pivoine officinale.*

Habitat. — Forests and barren places in southern Europe and central Asia. Much cultivated in gardens, and naturalized in "Steep Holme" Island, in the Severn.

Flowering time.—May or June.

Part employed.—The fresh root.

Characters.—*Roots* oblong, rounded, thick, united in a kind of bundle, yellowish, smooth outside, fragile, of a strong odour when fresh, white and fleshy within, of a nauseous and disagreeable taste. *Stem* simple, 1 to 2 feet high. *Leaves* alternate, petiolated, cut short, with oval leaflets, lobed, biternate below, simply ternate above. *Flowers* large, of a fine purplish-red colour; calyx 5 persistent folioles; corolla 5 or more petals; stamens numerous; capsules downy, unilocular, red within, many-seeded.

Time for collecting.—April.

Preparation. — Tincture, corresponding in alcoholic strength with proof spirit. Process I.

Proper forms for dispensing.—*φ and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

Average loss of moisture, 50 per cent.

PARIS QUADRIFOLIA.

Contractions.—Paris. Par.

Paris quadrifolia, *Linn.* *Nat. ord.*, TRILLIACEÆ.

Synonyms.—Herba Paris, Solanum quadrifolium, Aconitum pardalianches.

Fig.—Flora Hom., pl. 47.

Herb Paris, True-love, One Berry. German, *Einbeere;* French, *Parisette, Raisin de Renard;* Italian, *Uva de Volpe;* Spanish, *Ubas de Zooro.*

Habitat. — Woods and shady places in Europe and Russian Asia. Several parts of Britain, but very local.

Flowering time.—Spring and early summer.

Parts employed.—The entire plant.

Characters.—*Stem* 9 to 12 inches high, with a whorl of 4 broadly ovate or obovate leaves, 2 to 4 inches long. *Peduncle* rising 1 to 2 inches above the leaves. *Perianth* yellowish-green, 4 outer segments narrow lanceolate, about 1 inch long; 4 inner ones linear and rather more yellow. Anthers linear, on slender filaments. *Berry* bluish black.

Time for collecting.—At commencement of flowering.

Preparation. — Tincture, corresponding in alcoholic strength with proof spirit. Process I.

Proper forms for dispensing.—*φ and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

PETROLEUM.

Contractions.—Petr. Pet.

Synonym.—Oleum Petræ Album.

Rectified Oil of Petroleum. German, *Steinöl;* French, *Huile de petrole;* Italian, *Petrolio;* Spanish, *Petróleo.*

The name *Petroleum* is employed so loosely to designate numerous liquid hydrocarbons, that it is important to insure the use of the same substance which Hahnemann employed in his proving. This is made by agitating the liquid portion of Commercial Petroleum with Sulphuric Acid, and then rectifying the portion which this acid does not act upon. Its chemical constitution is very complex.

To secure its freedom from other volatile oils, agitate with an equal bulk of rectified spirit, and separate it from the spirit by means of a burette. It must be preserved in well-stoppered bottles.

Characters and Tests.—A light oily fluid, colourless, or of a pale straw colour, and strong characteristic napthalic smell. When agitated with a mixture of equal volumes of Sulphuric Acid and water, no change takes place beyond its imparting to the acid any yellow tint it may possess and itself becoming colourless. Dropped on white paper, it evaporates completely, leaving no greasy stain.

Preparation.— Solution in rectified spirit, 1 in 10, forming the 1^x attenuation.

Proper forms for dispensing.—1^x *and upwards, Tincture, Pilules, or Globules.*

PETROSELINUM.

Contractions.—Petros. Pts.

Petroselinum sativum, *Hoffm.* *Nat. ord.*, UMBELLIFERÆ.

Synonym.—Apium Petroselinum (*Linn.*).

Fig.—Engl. Bot., Supplem., t. 2793.

Common Parsley. German, *Gemeine Petersilie;* French, *Persil;* Italian, *Prezzemolo;* Spanish, *Perexil.*

Habitat. — A native of the Eastern Mediterranean region; much cultivated, and in this manner naturalized in most places.

Flowering time.—Summer.

Parts employed.—The entire fresh plant.

Characters.—An erect glabrous biennial, 1 to 3 feet high, with thick root and stiff branches. *Leaves* triangular in outline, twice pinnate, the segments stalked, ovate, lobed, and toothed; upper leaves less divided, with narrow, often linear, entire segments. *Umbels* all stalked, not very large, but with 15 to 20 rays. General involucre 3, 4, or 5 short linear bracts, the partial ones of several smaller bracts. *Flowers* rather small, greenish-yellow. The entire plant has the well-known odour of parsley.

Time for collecting.—Just as flowering commences.

Preparation. — Tincture, corresponding in alcoholic strength with dilute alcohol. Process I.

Proper forms for dispensing.—*ϕ and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

Average loss of moisture, 82 per cent.

PHELLANDRIUM.

Contractions.—Phell. Phl.

Œnanthe Phellandrium, *Lamb.* *Nat. ord.*, UMBELLIFERÆ.

Synonym.—Phellandrium aquaticum.

Fig.—Engl. Bot., t. 684.

Fine-leaved Water Dropwort. German, *Wasserfenchel;* French, *Ciguë aquatique, Fenouil d'eau.*

Habitat.—Wet ditches, ponds, &c., throughout temperate Europe and Russian Asia. Not uncommon in England and Ireland.

Flowering time.—Summer.

Part employed.—The ripe fruit.

Characters.—*Stem* rooting at the base, and either thickened and erect, or elongated and creeping, or floating according to the situation it grows in. The flowering branches erect or ascending. *Stem-leaves* twice or thrice pinnate, with small oblong and entire, or cuneate and lobed segments; or, when under water, all the lobes are narrow and long, sometimes capillary. *Umbels* on very short peduncles, either opposite to the leaves or in the forks of the branches. Rays seldom above 12. No general involucre, and but very small, narrow bracts to the partial ones. *Fruits* shortly pedicellate, cylindrical, or ovate-oblong, each carpel with 5 scarcely prominent broad ribs, and single vittas under the furrows. The calycine teeth are very minute. When ripe the fruits have a yellowish-brown colour, a peculiar, strong and disagreeable odour and an aromatic and acrid taste.

Care must be taken to distinguish these from the seeds of *Sium latifolium*, which are smaller and broader; the 5 ribs are much more slender, and there are several vittas under each interstice, while the small calycine teeth are usually very distinct.

Time for collecting.—September.

Preparation. — Tincture, using rectified spirit. Process I.

Proper forms for dispensing.—ϕ *and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

PHOSPHORUS.

Contractions.—Phos. Pho.

Common Transparent Phosphorus. P.

German, *Phosphor;* French, *Phosphore;* Italian and Spanish, *Fosforo.*

This well-known substance may be obtained chemically pure.

Characters and Tests.—A semi-transparent, colourless, wax-like solid, which emits white vapours when exposed to the air. Specific gravity 1·77. It is soft and flexible at common temperatures, melts at 110°, ignites in the air at a temperature a little above its melting-point, burning with a luminous flame and producing dense white fumes. Insoluble in water, but soluble in alcohol, ether, chloroform, and boiling oil of turpentine.

Preparations.—1. Saturated solution in ether, which will contain one grain of phosphorus in about 200 minims.

2. Saturated solution in absolute alcohol which will contain one grain of phosphorus in about 550 minims.

When making the alcoholic solution the bottle, with the stopper loose, should be placed in hot water till the phosphorus melts, when the stopper should be made firm, and the melted phosphorus vigorously shaken with the liquid, until the excess of the drug has solidified in minute granules.

It is well to keep a stick of phosphorus in each solution, renewing it whenever it becomes coated with the amorphous variety of the drug, so that the solution may always retain its full strength.

Both solutions should be made frequently, and preserved in amber glass stoppered bottles, at the temperature of 60° F. as a considerable decrease of strength occurs when the temperature falls much below that point. The 3^x attenuation of either solution is prepared by adding absolute alcohol until the proportion of 1000 minims to each grain is reached; those above 3^x are made with rectified spirit.

Proper forms for dispensing.—*Below* 3^x, *Solution only.* 3^x *and upwards, Tincture, Pilules, or Globules.*

PHYSOSTIGMA.

Contractions.—Physo.-v. Phs.

Physostigma venenosum, *Balfour.* *Nat. ord.*, LEGUMINOSÆ.

Fig.—Bent. and Trim., Med. Pl., 80.

Calabar Bean.

Habitat.—Western Africa.

Parts employed.—The seeds.

Characters.—About the size of a very large horse-bean, with a very firm, hard, brittle, shining integument of a brownish-red, pale chocolate, or ash-grey colour. Irregularly kidney-shaped, with two flat sides, and a furrow running longitudinally along its convex margin, ending in an aperture near one end of the seed. Within the shell is a kernel consisting of 2 cotyledons, weighing on an average about 46 grains, hard, white, and pulverizable, of a taste like that of the ordinary edible leguminous seeds, without bitterness, acrimony or aromatic flavour. It yields its virtues to alcohol, and imperfectly to water.

Preparations.—Tincture, using rectified spirit. Process I. Trituration.

Proper forms for dispensing.—1^x to 3, *Trituration; or,* ϕ *and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

PHYTOLACCA.

Contractions.—Phytol. Phy.

Phytolacca decandra, *Linn.* *Nat. ord.*, PHYTOLACCACEÆ.

Synonyms.—Phytolacca vulgaris, P. Americana, Solanum racemosum Americanum, Solanum magnum Virginianum, Blitum Americanum.

Fig.—Bigelow, Amer. Med. Bot., pl. 3.

Poke. German, *Scharlachbeere, Americanische Kermesbeere;* French, *Morrella à Grappes;* Italian, *Piauta lacca;* Spanish, *Hierba Carmin.*

Habitat.—North America. South of Europe—Portugal to Greece. Africa—Barbary States.

Flowering time.—Autumnal months.

Parts employed.—The root, and the berries.

Characters.—Root large, frequently exceeding a man's leg in thickness, branched, fleshy and fibrous, marked internally with concentric rings of considerable thickness, outer surface covered with a thin brownish bark, taste slightly sweetish, mild at first, but followed by a sense of acrimony. *Stalks* 6 to 9 feet high, round, smooth, and much branched; when young, green, but purple after the berries have ripened. *Leaves* scattered, ovate-oblong, smooth on both sides, ribbed underneath, entire, acute. *Flowers* grow on large pedunculated racemes opposite the leaves. Calyx none. Corolla resembles a calyx, whitish, with 5 round-ovate, concave, incurving petals. Stamens 10, styles 10. *Berries* dark purple.

Time for collecting.—The root, late in the autumn or during winter. The berries when ripe.

Preparations.—1. Tincture of the root, corresponding in alcoholic strength with dilute alcohol. Process I.

2. Tincture of the berries with proof spirit. Process I.

3. Trituration of the dried root.

4. Trituration of the resinoid known as *Phytolaccin.*

N.B.—The tincture of the root should be dispensed when no other direction is given.

Proper forms for dispensing.—*φ and upwards, Tincture, Tincture-trituration, Pilules, or Globules; or* 1^x *to* 3, *Trituration.*

Phytolaccin.—1^x *to* 3, *Trituration.*

PLANTAGO MAJOR.

Contractions.—Plant. Plg.

Plantago Major, *Linn.* *Nat. ord.*, PLANTAGINACEÆ.

Greater Plantain. Way-bread (corruption of way-bred). The Gaelic name signifies "healing plant," and that of the North American Indians "Englishman's foot." German, *Grosser Wegerich;* French, *Grand Plantain.*

Habitat.—Common in Europe and North America; often found growing by roadsides and footpaths.

Flowering time.—May to October.

Parts employed.—The fresh plant with the root.

Characters.—A well-known perennial herb, the mucilaginous seeds of which are eaten by birds, the ripe spikes being collected and sold for cage birds. It has a round scape rising from a fibrous root, varying in height from 1 to 3 feet. *Leaves* broadly ovate, smooth, entire or somewhat toothed, 5 to 7 nerved (each of which contains a strong fibre, which may be pulled out), and abruptly narrowed into a long channelled petiole. *Flowers* white, very small, imbricated, numerous, and densely disposed on a cylindrical spike, from 5 to 20 inches long. Small plants are frequently found with the spikes only half an inch to 2 inches long, and the leaves and stalk proportionately small. Stamens and styles long. *Seeds* numerous.

Time for collecting.—When flowering commences.

Preparation. — Tincture, corresponding in alcoholic strength with proof spirit. Process I.

Proper forms for dispensing.—φ *and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

Average loss of moisture, 77 per cent.

PLATINA.

Contractions.—Plat. Pla.

Present name.—Platinum. Pt.

Platina. German, *Platina;* French, *Platine;* Italian, *Platino.*

Obtained by precipitation from a dilute solution of Perchloride of Platinum by means of well-polished iron rods, upon which it is deposited as a spongy iron-grey mass, without lustre, soft, and light. To insure its purity, the perchloride of platinum, before it is decomposed, must be tested in the manner directed under *Platina Muriatica* (*See* Appendix), and the precipitate boiled with Hydrochloric Acid diluted with half its volume of distilled water so long as any colour is imparted to the liquid, and afterwards well washed with distilled water and dried.

Preparation.—Trituration.

Proper forms for dispensing.—1^{x}. *to* 3, *Trituration only.* 4 *and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

PLUMBUM.

Contractions.—Plumb. Plb.

Metallic Lead. Pb. German, *Blei;* French, *Plomb;* Italian, *Piombo;* Spanish, *Plomo.*

May be obtained chemically pure by igniting the Carbonate or Nitrate of Lead and reducing with black flux the resulting oxide. It can be very easily pulverized by first beating it rather thin on an anvil, and then rubbing down with sugar of milk.

Characters and Tests.—A bluish-white metal, so soft that it may easily be impressed, or cut with the thumb-nail; leaves a streak on paper; sp. gr. 11·4; dissolves slowly and entirely in hot diluted Nitric Acid forming a colourless solution which when diluted with water is precipitated black by Sulphuretted Hydrogen, white by diluted Sulphuric Acid, and yellow by Iodide of Potassium, and discharges the colour from Sulphate of Indigo.

Preparation.—Trituration.

Proper forms for dispensing.—1^x *to* 3, *Trituration only.* 4 *and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

PLUMBUM ACETICUM.

Contractions.—Plumb-a. Pb-a.

Synonym.—Plumbi Acetas.

Present name.—Normal Plumbic Acetate. $Pb(C_2H_3O_2)_2.3H_2O$.

Acetate of Lead. German, *Bleizucker;* French, *Sucre de plomb;* Italian, *Zucchero di Saturno;* Spanish, *Azucar de plomo.*

The Sugar of Lead of commerce purified by solution in distilled water and re-crystallization.

Characters and Tests.—In white crystalline masses, slightly efflorescent, having an acetous odour and a sweet astringent taste. Its solution in water slightly reddens litmus, gives a yellow precipitate with Iodide of Potassium, and is precipitated white by Sulphuric Acid, Acetic Acid being set free. Its solution in distilled water is clear, or has only a slight milkiness, which disappears on the addition of Acetic Acid. 38 grains dissolved in water require for complete precipitation 200 grain measures of the volumetric solution of Oxalic Acid.

Preparations.—Trituration. Solution in distilled water for 1^x, using dilute alcohol for 1, and rectified spirit for all above.

N.B.—These preparations should be freshly made.

Proper forms for dispensing.—1^x *to* 3, *Trituration; or* 1^x *and* 1, *Solution.* 3^x *and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

PLUMBUM CARBONICUM.

Synonym.—Plumbi Carbonas.

Present name.—Plumbic Carbonate. $PbCO_3$.

Carbonate of Lead. Pure White Lead. German, *Bleiweiss;* French, *Carbonate de plomb, Céruse;* Italian, *Cerussa;* Spanish, *Albayalde.*

Prepared by mixing dilute solutions of Acetate of Lead and Carbonate of Soda, collecting and washing the precipitate with distilled water.

Characters and Tests.—A soft heavy white powder, blackened by Sulphuretted Hydrogen, insoluble in water, soluble with effervescence in diluted Acetic Acid without leaving any residue, and forming a solution which is precipitated white by Sulphuric Acid, and yellow by Iodide of Potassium. The acetic solution, when treated with excess of Sulphuretted Hydrogen, boiled and filtered, gives no precipitate with Oxalate of Ammonia.

Preparation.—Trituration.

Proper forms for dispensing.—1^x *to* 3, *Trituration only.*

4 and upwards, Tincture, Tincture-trituration, Pilules, or Globules.

PODOPHYLLIN.

Contractions.—Podoph. Pdn.

Resin of Podophyllum.

The resinous product precipitated by the following process:—

Take of Podophyllum Root, in coarse powder	1 pound;
Rectified Spirit	3 pints, or a sufficiency;
Distilled Water	A sufficiency;
Hydrochloric Acid	A sufficiency.

Exhaust the podophyllum with the spirit by percolation; place the tincture in a still, and draw off the greater part of the spirit. Acidulate the water with one twenty-fourth of its bulk of hydrochloric acid, and slowly pour the liquid which remains after the distillation of the tincture into three times its volume of the acidulated water, constantly stirring. Allow the mixture to stand for twenty-four hours to deposit the resin; wash the resin on a filter with distilled water, and dry it in a stove.

Characters.—A pale greenish-brown amorphous powder, soluble in rectified spirit and in Ammonia; precipitated from the former solution by water, from the latter by acids. Almost entirely soluble in pure ether.

Preparations.—Trituration. Solution in rectified spirit, 1 in 10, which constitutes the mother tincture.

Proper forms for dispensing.—1^{x} to 3, *Trituration; or φ and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

PODOPHYLLUM.

Contractions.—Podoph-p. Pod.

Podophyllum peltatum, *Linn.* *Nat. ord.*, BERBERIDACEÆ.

Synonyms.—Anapodophyllum canadense, Aconitifolius humilis, Podophyllum callicarpum.

Fig.—Bigelow, Amer. Med. Bot., pl. 23.

May Apple, Mandrake, Wild Lemon, Ducksfoot. German, *Entenfus.*

Habitat.—Woods and meadows, Canada, Louisiana, and other parts of the United States.

Flowering time.—March to June.

Part employed.—The root.

Characters.—*Stem* about a foot high, erect, round, smooth, divided at top into two petioles, each bearing a single leaf, a solitary one-flowered peduncle rising from the fork. *Leaves* peltate, palmated, 5 to 7 parted, lobes toothed or cleft at apex, yellowish green above, paler and slightly pubescent beneath. *Flower* white, large, nodding. *Root* (as imported) in pieces of variable length, about 2 lines thick, mostly wrinkled longitudinally, dark reddish-brown externally, whitish within, breaking with a short fracture; accompanied with pale brown rootlets. When powdered, yellowish-grey, sweetish in odour, bitterish, subacrid and nauseous in taste.

Time for collecting.—Spring and autumn.

Preparations.—Tincture of dry root, using spirit of 20 O.P. Process I. Tincture of fresh root, prepared in and imported from North America.

Proper forms for dispensing.—*ϕ and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

Average loss of moisture, 77 per cent.

PRUNUS SPINOSA.

Contractions.—Prun-s. Pru.

Prunus communis, *Huds.* *Nat. ord.*, ROSACEÆ.

Synonym.—Prunus instititia.

Fig.—Engl. Bot., t. 842.

Blackthorn, Sloe. German, *Schlehdorn, Schwartzdorn;* French, *Prunellier, Epine noire.*

Habitat.—Hedges, thickets and open woods, in Europe, and Russian and central Asia. Abundant in Britain.

Flowering time.—Early spring.

Parts employed.—The flowers.

Characters.—A much-branched shrub, smaller branches often terminating in a stout thorn. *Leaves* ovate or oblong, stalked, finely toothed; usually glabrous, but under-side occasionally downy. *Flowers* small, white, nearly sessile.

Time for collecting.—When flowering commences.

Preparation. — Tincture, corresponding in alcoholic strength with proof spirit. Process I.

Proper forms for dispensing.—*ϕ and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

Average loss of moisture, 72 per cent.

PTELEA TRIFOLIATA.

Contractions.—Ptel-t. Pt-t.

Ptelea trifoliata, *Linn.* *Nat. ord.*, XANTHOXYLACEÆ.

Wafer Ash, Wingseed, Shrubby Trefoil, Swamp Dogwood, Hop-tree.

Habitat.—Rocky and shady places, moist hedges, skirts of woods; North America, from Pennsylvania to Wisconsin, and southward.

Flowering time.—June.

Part employed.—The bark.

Characters.—A shrub from 6 to 8 feet high, with *leaves* trifoliate, and marked with pellucid dots; leaflets sessile, ovate, short, acuminate, downy beneath when young, crenulate or obscurely toothed; lateral ones inequilateral, terminal ones cuneate at base, from 3 to 4½ inches long, by from 1¼ to 1½ inch wide. *Flowers* polygamous, greenish-white, nearly half an inch in diameter, of a disagreeable odour, and disposed in terminal corymbose cymes. *Stamens*, mostly 4; *style* short; *fruit* a 2 celled and 2 seeded samara, nearly 1 inch in diameter, winged all round, nearly orbicular. The *bark*, when dried, is in cylindrical rolls or quills, 1 or 2 lines in diameter, and from 1 to several inches long, of a light brownish colour, irregularly wrinkled, and covered with a thin epidermis. Internally it is yellowish white, but darkens by exposure. It has a peculiar, somewhat aromatic odour, and a bitter, persistently pungent, and slightly acrid, yet not disagreeable taste.

Preparation.—Tincture, using rectified spirit. Process I.

Proper forms for dispensing.—*φ and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

PULSATILLA.

Contractions.—Puls. Pul.

Pulsatilla pratensis, *Mill.* *Nat. ord.*, RANUNCULACEÆ.

Synonyms.—Pulsatilla nigricans, Anemone pratensis (*Linn.*), Herba Venti.

Fig.—Flora Hom., pl. 48.

Meadow Anemone, Pasque-flower, Wind-flower. German, *Wiesen pulsatilla;* French, *Pulsatille, Coquelourde.*

Habitat.—Sandy pastures in Germany, France, Denmark, Sweden, Russia, and Turkey, and in some parts of the south of England.

Flowering time.—In spring, and again in August and September.

Parts employed.—The entire plant.

Characters.—*Root* thick, short, sending off several strong fibres. *Flower-stem* 5 to 8 inches high, smooth, beset with soft hairs, with lancinated involucrum. *Leaves* radical, bipinnate; segments narrow, short, linear, glaucous green. *Flowers*, sepals 6, oblong, hairy, blackish-purple, with reflexed points. *Seeds* retaining their styles, which are long and downy. As the *Anemone Pulsatilla* is more common in this country, and at times approaches in character the *Pulsatilla pratensis*, care must be taken to procure the right plant. Where a difficulty is found in obtaining it, it will be well to import the tincture of the fresh plant from Germany.

Time for collecting.—When in flower.

Preparation. — Tincture, corresponding in alcoholic strength with proof spirit. Process I.

Proper forms for dispensing.—*ϕ and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

PULSATILLA NUTTALLIANA.

Contractions.—Puls-nut. Ps-n.

Anemone Nuttalliana, *D.C.* *Nat. ord.*, RANUNCULACEÆ.

Synonyms.—Anemone pratensis, A. Ludoviciana.

Fig.—Hale's New Remedies, in the 2nd but not in later editions.

American Pulsatilla.

Habitat.—British America; Valley of the Rocky Mountains; on the Missouri and Platte; Illinois.

Flowering time.—Spring.

Parts employed.—The entire plant.

Characters.—Villous, with long silken hairs. *Stem* erect; in flower, very short; in fruit, 8 to 12 inches high. *Leaves* long-stalked, ternately divided, the lateral divisions two-parted, the middle one stalked and three-parted, the segments once or twice cleft into narrow linear and acute lobes. *Involucres* lobed like the leaves, sessile, subulately dissected, concave or cup-shaped in position. *Sepals* 5 to 7, purplish, spreading, about 1 inch long, silky outside. *Flower* single, appearing before the leaves, pale purple, cup-shaped. *Carpels* 50 to 75, with long plumose tails, 1 to 2 inches in length, collected into a roundish head. Appears to partake of the characters of both the European species.

Time for collecting.—When in flower.

Preparation. — Tincture, corresponding in alcoholic strength with proof spirit, prepared in and imported from North America. Process I.

Proper forms for dispensing.—*ϕ and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

RANUNCULUS BULBOSUS.

Contractions.—Ran-b. Rn-b.

Ranunculus bulbosus, *Linn.* *Nat. ord.*, RANUNCULACEÆ.

Synonym.—R. tuberosus.

Fig.—Flora Hom., pl. 49.

Bulbous Crowfoot. German, *Zwiebelhahnenfuss;* French, *Rénoncule;* Italian, *Ranunculo;* Spanish, *Ranunculo.*

Habitat.—Meadows and pastures over the greater part of Europe. Abundant in England, Ireland, and southern Scotland.

Flowering time.—Early summer.

Parts employed.—The entire fresh plant.

Characters.—*Stem* 1 foot high, usually thickened at base into a kind of bulb. *Leaves* divided into 3 segments more or less cut. *Sepals* reflected closely on the peduncle when the flower opens. *Carpels* glabrous and smooth.

Time for collecting.—When in flower.

Preparation. — Tincture, corresponding in alcoholic strength with proof spirit. Process I. It should be frequently prepared and carefully preserved.

Proper forms for dispensing.—*ϕ and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

Average loss of moisture, 70 per cent.

RANUNCULUS SCELERATUS.

Contractions.—Ran-s. Rn-s.

Ranunculus sceleratus, *Linn.* *Nat. ord.*, RANUNCULACEÆ.

Synonym.—Herba sardoa.

Fig.—Eng. Bot., t. 681.

Marsh Crowfoot, Celery-leaved Buttercup. German, *Gifthahnenfuss ;* French, *Herbe sardonique, Grenouillette d'eau.*

Habitat.—Sides of pools and wet ditches. Over nearly the whole of Europe and Russian and central Asia. Pretty common in Britain.

Flowering time.—Summer.

Parts employed.—The fresh plant.

Characters.—An erect, much branched annual, 1 to 2 feet high, glabrous, or nearly so. *Stem* thick and hollow. *Leaves*, lower ones stalked, divided into 3 or more obtusely toothed or lobed segments; upper ones sessile, with 3 narrow segments. *Flowers* small and numerous, petals pale yellow, scarcely longer than the calyx. *Carpels* very small and numerous in a dense head, which becomes oblong as the fruit ripens.

Time for collecting.—When in flower.

Preparation. — Tincture, corresponding in alcoholic strength with proof spirit. Process I. It should be frequently prepared and carefully preserved.

Proper forms for dispensing.—*ϕ and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

Average loss of moisture, 79 per cent.

RAPHANUS.

Contractions.—Raph. Rap.

Raphanus sativus, *Linn.* *Nat. ord.*, CRUCIFERÆ.

Black Radish. German, *Gartenrettig;* French, *Rave;* Italian, *Rafano;* Spanish, *Rabano.*

Habitat.—Native of China; cultivated all over Europe from time immemorial.

Flowering time.—Spring.

Part employed.—The fresh tuber.

Characters.—The cultivated Radish is too well known to require description. The variety used in the proving was that known as the Large Spanish Black Radish, the root of which is large and turnip-shaped, and the outer skin quite black.

Time for collecting.—Immediately before flowering.

Preparation. — Tincture, corresponding in alcoholic strength with proof spirit. Process I.

Proper forms for dispensing.—*ϕ and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

RATANHIA.

Contraction.—Rat.

Krameria triandra, *Ruiz and Pavon. Nat. ord.,* KRAMERIACEÆ.

Rhatany. German, *Ratanhiawurtzel;* French, *Ratanhia;* Italian and Spanish, *Ratania.*

Habitat.—Peru and Bolivia.

Part employed.—The dried root as imported.

Characters.—About an inch in diameter, branches numerous, long, brownish-red and rough externally, reddish-yellow internally, strongly astringent, tinging the saliva red.

Preparation.—Tincture, using proof spirit. Process I.

Proper forms for dispensing.—*ϕ and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

RHEUM.

Contraction.—Rhe.

Rheum palmatum, *Linn.*, and other species. *Nat. ord.,* POLYGONACEÆ.

Synonym.—Rhabarbarum.

Fig.—Flor. Hom., pl. 50.

Rhubarb. German, *Rhabarber;* French, *Rhubarbe;* Italian, *Rabarbaro;* Spanish, *Ruibarbo.*

Habitat.—China, Chinese Tartary, and Thibet.

Part employed.—The dry root as imported.

Characters.—Trapezoidal, roundish, cylindrical, or flattish pieces, frequently bored with one hole, yellow externally, internally marbled with fine, wavy, greyish, and reddish lines;

finely gritty under the teeth; taste bitter, faintly astringent and aromatic; odour peculiar. Free from decay, not worm-eaten. Boracic Acid does not turn the yellow exterior reddish-brown.

Preparation.—Tincture, using proof spirit. Process I.

Proper forms for dispensing.—*ϕ and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

RHODODENDRON.

Contractions.—Rhod. Rho.

Rhododendron chrysanthum, *Pall. Nat. ord.*, ERICACEÆ.

Synonym.—R. officinale.

Fig.—Woodv. Med. Bot., t. 149.

Golden-flowered Rhododendron. German, *Siberische Schneerose;* French, *Rose de neige de Sibérie.*

Habitat.—The highest mountains of Siberia and the Caucasus, also in Kamtschatka.

Parts employed.—Dried leaves and flower-buds.

Characters.—*Leaves* 2 or 3 inches long, nutbrown, obovate obtuse, reflexed at the margin, thick and leatherlike, rugged and much veined on their upper surface, under surface generally smooth and lighter in colour, surrounding the branches on strong footstalks which arise from between the imbricated stipular squamæ, and accompanied by the red-brown woolly flower buds. They smell slightly like rhubarb, and have an astringent taste. The leaves of *Rhododendron ferrugineum* are sometimes substituted for them, but these are easily distinguished by the dark, rust-coloured cover of the under-side, and the absence of the strong characteristic odour of *R. chrysanthum.*

Time for collecting.—When the flower-buds are well developed but not opened.

Preparation.—Tincture, using proof spirit. Process I.

Proper forms for dispensing.—*ϕ and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

RHUS.

Contraction.—Rhs.

Rhus toxicodendron, *Linn.* *Nat. ord.*, ANACARDIACEÆ.

Synonym.—Vitis Canadensis.

Fig.—Flora Hom., pl. 51.

Poison Oak. German, *Gift Sumach;* French, *Sumac Vénéneux;* Italian, *Rus Toxicodendro.*

Habitat.—North America.

Flowering time.—June and July.

Parts employed.—The fresh leaves.

Characters.—*Shrub* 1 to 3 feet high. *Leaves* on long petioles consisting of 3 leaflets, of ovate or rhomboidal form, pointed, strongly veined, glabrous on upper surface, but more or less downy underneath, margin serrated.

Time for collecting.—May and June, before flowering. It should be collected at sunset and never exposed to the sun.

Preparation. — Tincture, corresponding in alcoholic strength with 40 O.P. spirit, prepared in and imported from North America. Process I.

Proper forms for dispensing.—*ϕ and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

RHUS RADICANS.

Contractions.—Rhus-rad. Rs-r.

Rhus radicans, *Linn.* *Nat. ord.*, ANACARDIACEÆ.

Poison Vine.

It seems still a disputed question whether this differs from *R. toxicodendron* in anything but habit, *Rhus tox.* being a dwarf, erect shrub, while *R. radicans* is a climber. Meantime, since they have been separately proved, and each proving contains symptoms peculiar to itself, it is much the best plan to make tinctures of each and keep them separate. The distinguishing characters of *R. radicans* are the following :—

Stem, from 5 to 40 feet high, furnished with numerous radicles by which it adheres to trees and climbs up them like ivy. *Leaves* trifoliate and resembling *R. toxicodendron* in shape, but equally glabrous on both sides and with margins entire.

Preparation. — Tincture, corresponding in alcoholic strength with 40 O.P. spirit, prepared in and imported from North America. Process I.

Proper forms for dispensing.—*ϕ and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

RHUS VENENATA.

Contractions.—Rhus-ven. Rs-v.

Rhus venenata, *D.C.* *Nat. ord.*, ANACARDIACEÆ.

Synonym.—Rhus vernix.

Fig.—Bigelow, Amer. Med. Bot., pl. 10, described as Rhus vernix.

Poison Sumach, Poison Elder, Varnish Tree. German, *Firniss-Sumach ;* French, *Sumac vernicifère.*

Habitat.—In swamps. Canada and Northern States, Georgia, Louisiana, and Japan.

Flowering time.—June.

Parts employed.—Young shoots, or the milky juice which exudes from incisions in the bark.

Characters.—A shrub, 8 to 15 feet high, very poisonous to the touch with most persons. *Leaves* pinnate, with from 3 to 6 pairs of opposite leaflets besides the terminal one, often slightly pubescent beneath. *Flowers* greenish, mostly diœcious, small. *Drupe* as large as a pea, not broader than long, compressed. Cotyledons oval, rather thick and fleshy.

Time for collecting.—June to August. It should, like Rhus toxicodendron, be collected at sunset.

Preparation.—Tincture, corresponding in alcoholic strength with 40 O.P. spirit, prepared in and imported from North America. Process I.

Proper forms for dispensing.—*ϕ and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

RUMEX.

Contraction.—Rum.

Rumex crispus, *Linn.* *Nat. ord.*, POLYGONACEÆ.

Fig.—Eng. Bot., t. 1998.

Curled Dock, Yellow Dock. German, *Krauser Ampfer.*

Habitat.—Road-sides, ditches, and waste places throughout Europe and Russian Asia. Abundant in Britain.

Flowering time.—Summer.

Part employed.—The fresh root.

Characters.—*Root* spindle-shaped, yellow. *Stems* 2 to 3 feet high, with few branches. *Leaves*, radical ones, long, narrow, much waved or crisped at the edges, 6 to 8 inches long, upper ones smaller and narrower, gradually merging into bracts. *Flowers* in numerous whorls. Inner segments of fruiting perianth, broadly ovate, and one at least bearing on its midrib a coloured tubercle or grain.

Time for collecting.—When flowering commences.

Preparation. — Tincture, corresponding in alcoholic strength with proof spirit. Process I.

Proper forms for dispensing.—*ϕ and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

Average loss of moisture, 65 per cent.

RUTA.

Contraction.—Rut.

Ruta graveolens, *Linn.* *Nat. ord.*, RUTACEÆ.

Synonym.—R. hortensis et montana.

Fig.—Flora Hom. pl. 52.

Common Rue. German, *Raute;* French, *Rue des Jardins;* Italian, *Ruta;* Spanish, *Ruda.*

Habitat.—South of Europe. Naturalized in our gardens.

Flowering time.—June to September.

Parts employed.—The herbaceous parts.

Characters.—Hardy, evergreen under-shrub. *Stem,* lower part woody. *Leaves* doubly pinnate, leaflets obovate, sessile, somewhat fleshy, glaucous, bluish-green. *Flowers* in umbellate racemes, pale yellow, petals 4 or 5, fringed at the extremity, claws narrow. Smell of plant very strong and disagreeable, taste very bitter, nauseous, hot and acrid.

Time for collecting.—Just after flowering has well commenced.

Preparation. — Tincture, corresponding in alcoholic strength with proof spirit. Process I.

Proper forms for dispensing.—ϕ *and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

Average loss of moisture, 71 per cent.

SABADILLA.

Contractions.—Sabad. Sbd.

Asagræa officinalis, *Lind.* *Nat. ord.*, MELANTHACEÆ.

Synonyms.—Veratrum sabadilla, Helonias off.

Fig.—Lind. Bot. Reg., vol. xxv., pl. 33.

Cevadilla. German, *Sabadillgermer;* French, *Cévadille;* Spanish, *Cebadilla.*

Habitat.—Mexico; imported from Vera Cruz.

Parts employed.—The dried capsuled seeds as imported.

Characters.—Fruit about half an inch long, consisting of three light-brown papyraceous follicles, each containing from one to three seeds, which are about a quarter of an inch long, blackish-brown, shining, slightly winged, possessing an intensely acrid bitter taste. The source of the alkaloid *Veratria.*

Preparations.—Tincture, using 20 O.P. spirit. Process I. Trituration.

Proper forms for dispensing.—ϕ *and upwards, Tincture, Tincture-trituration, Pilules, or Globules.* 1^x to 3, *Trituration.*

SABINA.

Contractions.—Sabin. Sab.

Juniperus Sabina, *Linn.* *Nat. ord.*, CONIFERÆ.

Synonyms.—Sabina vulgaris, S. sterilis.

Fig.—Flora Hom., pl. 53.

Savin. German, *Sadebaum;* French, *Sabine;* Italian, *Sabina;* Spanish, *Sabina.*

Habitat.—South of Europe and the Levant. Cultivated in this country.

Parts employed.—Fresh leaves and points of shoots of cultivated plants. Also the oil distilled from the same.

Characters.—An evergreen shrub, from 3 to 15 feet high, with numerous erect, pliant branches, much sub-divided. *Twigs* densely covered with minute imbricated appressed leaves in 4 rows; odour strong, peculiar and unpleasant; taste acrid, bitter, resinous, and disagreeable. *Oil* colourless or pale yellow.

Time for collecting.—April and May.

Preparation.—Tincture of the leaves and shoots, corresponding in alcoholic strength with 40 O.P. spirit. Process I. Solution of the oil in rectified spirit forming 1^x.

N.B.—The 1^x solution of this oil will be from 50 to 100 times the strength of the mother tincture of the leaves and shoots.

Proper forms for dispensing. — *φ and upwards* (*or* Oleum Sabinæ 1^x *and upwards*), *Tincture, Tincture-trituration, Pilules, or Globules.*

Average loss of moisture, 53 per cent.

SAMBUCUS.

Contractions.—Samb. Sam.

Sambucus nigra, *Linn.* *Nat. ord.*, CAPRIFOLIACEÆ.

Fig.—Flora Hom., pl. 54.

Elder. German, *Hollunder, Holder, Fliederbaum;* French, *Sureau;* Italian, *Sambuco;* Spanish, *Sauco.*

Habitat.—Woods, coppices, and waste places in central and southern Europe. Common in England and Wales.

Flowering time.—Early summer.

Part employed. — The fresh inner bark of the young branches.

Characters.—A small tree, or shrub, with the stem and branches full of pith. *Leaf segments* 5 to 7, ovate, pointed, regularly and sharply toothed, and nearly glabrous; without stipular lobes. *Flowers* white or cream-coloured, in corymbs 5 or 6 inches broad, several times branched; bracts very minute. *Inner bark* without smell; taste at first sweetish, afterwards slightly bitter, acrid, and nauseous.

Time for collecting.—When flowers and young fruit are on the trees.

Preparation. — Tincture, corresponding in alcoholic strength with proof spirit. Process I.

Proper forms for dispensing.—*ϕ and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

Average loss of moisture, 66 per cent.

SANGUINARIA.

Contractions.—Sang. San.

Sanguinaria Canadensis, *Linn.* *Nat. ord.* PAPAVERACEÆ.

Synonym.—S. grandiflora.

Fig.—Bigelow, Amer. Med. Bot., pl. 7.

Blood-root, Red-root, Puccoon. German, *Blutwurzel.*

Habitat. — Open woods on light soils. Canada to Florida.

Flowering time.—March and April.

Part employed.—The rhizome.

Characters.—Petals 8 to 12. Stamens 24. Stigmas 2. An acaulescent herb, with a large creeping rhizome. *Leaves* reniform, palmately 5—7 lobed. *Flowers* rather large, white, long. The dry *rhizome* occurs in pieces 2 or 3 inches long, $\frac{1}{4}$ to $\frac{1}{2}$ inch or more in thickness, flattened, wrinkled and twisted, reddish-brown externally, of a bright, somewhat orange red internally; fracture short, spongy, uneven, resinous. It has a bitterish, very acrid, peculiar taste, which remains long in the mouth, and leaves a persistent burning in the throat.

Time for collecting.—Early in spring or late in autumn.

Preparations. — Tincture, corresponding in alcoholic strength with proof spirit. Process I. Trituration of the resinoid known as *Sanguinarin.*

Proper forms for dispensing.—ϕ *and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

SANTONINUM.

Contractions.—Sant. Snt.

Santonin. $C_{15}H_{18}O_3$.

A crystalline neutral principle obtained from *Wormseed*—the unexpanded flower heads of an undetermined species of *Artemisia,* Linn., imported from Russia.

It may be prepared by boiling the wormseed with water and slaked lime and precipitating the strained liquor with hydrochloric acid. It is then purified by washing first with distilled water, then with ammonia, and again with water, digesting the precipitate, mixed with animal charcoal, in hot alcohol, and by repeated crystallization. It should be kept in an amber glass bottle.

Characters and Tests.—Colourless, flat, rhombic prisms, feebly bitter, fusible and sublimable by a moderate heat, scarcely soluble in cold water, sparingly in boiling water, but abundantly in chloroform and boiling rectified spirit. Sunlight renders it yellow; not dissolved by diluted mineral acids; entirely destructible by a red heat with free access of air.

Preparations.—Trituration. Solution in warm rectified spirit for 1.

Proper forms for dispensing.—1^x *to* 3 *Trituration; or* 1 *and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

SARSA.

Contractions.—Sars. Sar.

Smilax officinalis, *Humb. and Bonp. Nat. ord.* SMILACEÆ.

Synonyms.—S. medica, S. Peruviana.

Fig.—Flora Hom., pl. 55.

Sarsaparilla. German, *Sassaparilla;* French, *Salsapareille;* Italian, *Salsapariglio;* Spanish, *Sarzaparilla.*

Habitat.—Central America.

Part employed.—The dried root as imported from Jamaica.

Characters.—*Roots* not thicker than a goose-quill, generally many feet in length, reddish-brown, covered with rootlets, and folded in bundles about 18 inches long; scentless; taste mucilaginous, feebly bitter, faintly acrid.

Preparations.—Tincture, using proof spirit. Process I. Trituration.

Proper forms for dispensing.—ϕ *and upwards, Tincture, Tincture-trituration, Pilules, or Globules; or* 1^x *to* 3, *Trituration.*

SCILLA.

Contractions.—Scill. Squ.

Urginea Scilla, *Steinheil.* *Nat. ord.*, LILIACEÆ.

Synonyms.—Scilla maritima, S. Hispanica, Ornithogalum Scilla.

Fig.—Flora Hom., pl. 56.

Squill, Sea Onion. German, *Meerzwiebel;* French, *Oignon marine;* Italian, *Ciropollo marina;* Spanish, *Escella, Cebollo albarana.*

Habitat.—Coasts of Mediterranean.

Part employed.—The fresh bulb.

Characters.—*Bulb* pear-shaped; weighing from ½ lb. to 10 lbs.; outer scales membranous, brownish-red or white; inner scales thick, whitish, fleshy, juicy; taste mucilaginous, intensely and disagreeably bitter, somewhat acrid.

Preparation.—Tincture, corresponding in alcoholic strength with proof spirit. Process II.

Proper forms for dispensing.—*ϕ and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

Average loss of moisture, 71 per cent.

SECALE.

Contractions.—Secal. Sec.

Claviceps purpurea, *Tulasne.* *Nat. ord.*, FUNGI.

Synonyms.—Secale cornutum, Acinula Clavus, Ergota.

Fig.—Steph. and Church. Med. Bot., pl. 113.

Ergot of Rye, Spurred Rye. German, *Mutterkorn, Kornzapfen;* French, *Ergot, Seigle ergoté;* Italian, *Allogliato.*

This consists of the sclerotium (compact mycelium or spawn) of the above-named fungus, produced within the paleæ of the common rye, *Secale cereale*, Linn.

Characters.—Subtriangular, curved, with a longitudinal furrow on the concave side, obtuse at the ends; from ⅓rd of an inch to 1½ inch in length; of a violet-brown colour on the surface, pinkish within, solid, frangible, fracture short, odour faintly marked, but strong if the powder be triturated with solution of Potash.

Time for collecting.—Immediately before the rye is harvested.

Preparations.—Tincture of the freshly gathered Ergot, using proof spirit. Process I. Trituration, which must be freshly made.

Liquid extract prepared as follows:—

Take of Ergot, in coarse powder - -	1 pound;
Ether - - - -	1 pint, or a sufficiency;
Distilled Water - - -	3½ pints;
Rectified Spirit - - -	8 fluid ounces.

Shake the ether in a bottle with half a pint of the water, and after separation decant the ether. Place the ergot in a percolator, and free it from its oil by passing the washed ether slowly through it. Remove the marc, and digest it in three pints of the water at 160° for twelve hours. Press out, strain, and evaporate the liquor by the heat of a water-bath to nine fluid ounces; when cold, add the spirit. Allow it to stand for an hour to coagulate, then filter. The product should measure sixteen fluid ounces.

Proper forms for dispensing.—ϕ *and upwards, Tincture, Tincture-trituration, Pilules, or Globules; or,* 1^x *to* 3, *Trituration; or Liquid Extract,* ϕ.

SELENIUM.

Contractions.—Selen. Sel.

Selenium, Se.

A non-metallic element, very analogous to sulphur in many of its chemical properties, obtained from several native metallic selenides by treating them with hydrochloric acid and igniting the washed and dried residue with black flux, dissolving out the resulting selenide of potassium with boiling water and exposing the solution to to the air. The selenium is deposited and afterwards purified by washing, drying and distillation.

Characters and Tests.—A deep reddish-brown amorphous substance, brilliant and brittle, varying in specific gravity from 4·3 to 4·8, yielding, when pulverized, a scarlet red powder without taste or smell. It fuses at a temperature a little above 212°, and heated in the air, it burns with a blue flame, while part is volatilized in red fumes, emitting an odour like that of Bisulphide of Carbon. Insoluble in water or alcohol, but forming a green solution in strong Sulphuric Acid, from which it is precipitated unchanged by dilution. Soluble also in Nitric Acid, forming a clear solution, which, when acidulated with Hydrochloric Acid, gives with Sulphuretted Hydrogen a yellow precipitate entirely soluble in Sulphide of Ammonium.

Preparation.—Trituration.

Proper forms for dispensing.—1^x to 3, *Trituration only. 4 and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

SENECIO.

Contraction.—Senec. Snc.

Senecio aureus, *Linn. Nat. ord.*, COMPOSITÆ.

Synonym.—S. gracilis.

Fig.—Rehl, Flor. Germ., 16, pl. 982.

Life-root, Golden Ragwort, Squaw-weed.

Indian Name.—Uncum.

Habitat.—Banks of creeks and low marshy ground throughout the north and west of the United States.

Flowering time.—May and June.

Parts employed.—The entire plant.

Characters.—Stem erect, smoothish, striate, 1 or 2 feet high, flocose-woolly when young, simple or branched above, terminating in a kind of umbellate, simple or compound corymb. *Radical leaves* simple and rounded, the larger mostly cordate, crenate-serrate, and long-petioled; *lower cauline leaves* lyre-shaped; the upper ones few, slender, cut-pinnatifid, dentate, sessile or partly clasping; terminal segments lanceolate; peduncles sub-umbellate, and thick upwards; corymbs umbel-like. Rays from 8 to 12, 4 or 5 lines long, spreading. *Flowers* golden yellow. *Scales* linear, acute, and purplish at the apex. *Root* horizontal, from half an inch to 6 or 8 inches in length, and about 2 lines in diameter, reddish or purplish externally, and purplish white internally, with an aromatic taste, and having scattered fibres.

Dr. Hale has satisfied himself as to the identity of *S. aureus* and *S. gracilis,* the latter being only a slender state of the former, " found on rocky shores."

Time for collecting.—When in flower.

Preparations. — Tincture, corresponding in alcoholic strength with proof spirit. Process I. Trituration of the resinoid known as *Senecin.*

Proper forms for dispensing.—*ϕ and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

SENEGA.

Contractions.—Seneg. Sng.

Polygala Senega, *Linn.* *Nat. ord.*, POLYGALACEÆ.

Fig.—Flora Hom., pl. 58.

Rattlesnake Milkwort, Snakewort. German, *Senegawurzel, Giftwidrige Kreuzblume;* French, *Polygale de Virginie;* Italian, *Poligala Virginiana.*

Habitat.—North America.

Part employed.—The dried root, as imported.

Characters.—A knobby root-stock, with a branched tap-root, of about the thickness of a quill, twisted and keeled; bark yellowish-brown, sweetish, afterwards pungent, causing salivation; interior woody, tasteless, inert.

Preparation.—Tincture, using proof spirit. Process I.

Proper forms for dispensing.—*ϕ and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

SEPIA.

Contraction.—Sep.

Sepia officinalis, *Linn.* *Class,* MOLLUSCA; *Sub-class,* CEPHALOPODA; *Order,* DIBRANCHIATA; *Section,* DECAPODA; *Family,* SEPIADÆ.

Sepia. German, *Tintenfisch, Sepiensaft;* French, *Sèche ordinaire, Encre de Sèche.*

The substance proved by Hahnemann is the peculiar secretion of this mollusc, which is called *Cuttle-fish Ink,* being the well-known dark-brown paint, *Sepia.* It is brought to this country from the Mediterranean, and should be obtained still enclosed in the bag in which it has been dried. The prepared sepia of the painters will not do, as it has been acted upon by caustic potash.

Characters.—A brownish-black solid mass, somewhat the size and shape of a grape, very brittle, with a conchoidal fracture, having a faint fishy smell and hardly any taste. Insoluble in water, but readily diffused through it and settling down slowly.

Preparation.—Trituration.

Proper forms for dispensing.—1^x *to* 3, *Trituration only.* 4 *and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

SILICEA.

Contractions.—Silic. Sil.

Synonyms.—Silicea Terra, Silica.

Present name.—Silicic Anhydride. SiO_2.

Pure Flint, Silex. German, *Kieselerde ;* French, *Silice ;* Italian, *Silice ;* Spanish, *Sílice.*

Hahnemann directs this to be prepared as follows:—

"Take half an ounce of mountain-crystal and expose it several times to a red heat, or take pure white sand and wash it with distilled vinegar; when washed mix it with 2 ounces of powdered Natrum, melt the whole in an iron crucible until effervescence has ceased and the liquefied mass looks clear and smooth, which is then to be poured upon a marble plate. The limpid glass which is thus obtained is to be pulverized while warm and to be filled in a phial, adding four times its own weight of distilled water (the phial being exactly filled to a level and a stopper being put in immediately). This mixture forms a solution which remains always clear; but upon pouring it into an open phial, which is loosely covered with paper, it becomes decomposed, and the snow-white Silica separates from the Natrum and falls to the bottom of the phial."

The following process, which does not differ in any essential particular from that of Hahnemann, is practically the better one:—

Take of	Silica, in powder	1 part.
	Dried Carbonate of Soda	4 parts.

Fuse the 4 parts of dry sodic carbonate in a clay crucible, and then gradually add to the fused mass the powdered silica; at each addition of which an escape of carbonic acid gas takes place, so that a roomy crucible should be used.

When the carbonic acid gas is no longer given off, pour the fused mass upon a clean marble slab, and while it is slightly warm break it into small pieces, put it into a wide-mouthed bottle, and add sufficient distilled water to dissolve it, the stopper being capped with wet bladder. The following day the solution may be diluted and rapidly filtered through cotton wool to purify from small pieces of dirt, &c.; then add to the filtered liquor, hydrochloric acid, in small quantities from time to time. The hydrated silica is precipitated in the form of a bulky gelatinous white precipitate, which is collected and washed with distilled water upon a filter. The washing must be continued until the filtrate possesses no taste and only exhibits faint cloudiness with solution of nitrate of silver. The precipitate, when thoroughly washed, may be dried upon a porcelain water-bath, when it shrinks to an impalpable powder.

The discovery of dialysis by the late Prof. Graham has supplied a method by which a moderately strong solution of pure hydrated silica may be obtained. It is, however, more interesting than useful, as it will not keep, the silica becoming solid after a few days.

Characters and Tests.—A white amorphous powder, almost insoluble in water or dilute acids (except Hydrofluoric Acid), tasteless and odourless. If 10 grains be placed on a filter and repeatedly washed with 2 fluid drachms of distilled water, the filtrate will exhibit only faint cloudiness upon the addition of Nitrate of Silver.

Preparation.—Trituration.

Proper forms for dispensing.—1^x to 3, *Trituration only.* 4 *and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

SOLANUM NIGRUM.

Contractions.—Sol-n. So-n.

Solanum nigrum, *Linn.* *Nat ord.*, SOLANACEÆ.

Black Nightshade. German, *Schwartzer Nachtschatten;* French, *Morelle noire.*

Habitat.—Widely spread over every part of the globe except the extreme north and south. Rare in Scotland.

Flowering time.—The whole summer and autumn.

Parts employed.—The fresh herb, bearing ripe and unripe berries.

Characters.—An erect annual or biennial, with very spreading branches, about 1 foot high: usually glabrous or nearly so, but often hairy and rough on the angles. *Leaves* stalked, ovate, with coarse angular teeth. *Flowers* small and white, in little cymes almost contracted into umbels, on short, lateral peduncles. Anthers almost sessile, closed or joined together in an erect cone round the style in the centre of the flower. *Berries* small, globular, usually black, but sometimes green, yellow, or dingy red.

Time for collecting.—September and October.

Preparation.—Tincture, corresponding in alcoholic strength with dilute alcohol. Process I.

Proper forms for dispensing.—*φ and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

Average loss of moisture, 80 per cent.

SPIGELIA.

Contractions.—Spig. Spi.

Spigelia Anthelmia, *Linn.* *Nat ord.*, LOGANIACEÆ.

Synonym.—Anthelminthia quadriphylla.

Fig.—Flora Hom., pl. 59.

Demerara Pinkroot, Wormgrass. German, *Wurmtreibende Spigelia ;* French, *Brinvilliers.*

Habitat.—South America, Brazil, southern and south-western United States.

Flowering time.—July.

Part employed.—The dried herb.

Characters.—An annual. *Root* hairy, blackish outside, white within. *Stem* herbaceous, 1½ foot high, channelled and branched. *Leaves* opposite in pairs, those which terminate the branches 4 together in the form of a cross, ovate, pointed. *Flowers* in short clustered spikes. When fresh the plant has a poisonous fetid odour ; taste nauseous, remaining long on the tongue. The dried plant is of a greyish-green colour, has a faint odour and bitter taste.

Time for collecting. — When there are flowers and seeds.

Preparations. — Tincture, using rectified spirit. Process I. Trituration.

Proper forms for dispensing.—*φ and upwards, Tincture, Tincture-trituration, Pilules, or Globules; or* 1^x *to* 3 *Trituration.*

SPONGIA TOSTA.

Contractions.—Spong. Spo.

Spongia officinalis, *Linn.* *Class*, PORIFERA.

Turkey Sponge. German, *Gebrannter Meerschwamm;* French, *Eponge torréfiée;* Italian, *Spugna torrefatta;* Spanish, *Esponja tostada.*

The horny skeleton of at least two species of sponge imported in the dry state. Care must be taken to select a specimen which has not been prepared by bleaching, as for the toilet, and to free it from all foreign substances. Before using it, it must be cut into small pieces and roasted until it has become brown and friable, and can be readily reduced to powder.

Preparations.—Trituration. Tincture, using 20 O.P. spirit.

Proper forms for dispensing.—1^x *to* 3, *Trituration; or* ϕ *and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

STANNUM.

Contractions.—Stan. Stn.

Metallic Tin. Sn. German, *Zinn;* French, *Etain;* Italian, *Stagno.*

The chemically pure metal beaten into the thinnest foil.

Characters and Tests.—Thin brilliant metallic leaf having a lustre and whiteness approaching that of silver, very slowly tarnished by exposure to air and moisture. It emits a peculiar odour when rubbed between the thumb and finger. Dissolves slowly but entirely in hot Hydrochloric Acid, forming a colourless solution which, when diluted with six times its volume of distilled water, remains clear, is unaffected by diluted Sulphuric

Acid, and yields a pure white precipitate with yellow Prussiate of Potash, and a dark brown precipitate with Sulphuretted Hydrogen, soluble in yellow Sulphide of Ammonium.

Preparation.—Trituration.

Proper forms for dispensing.—1^x *to* 3, *Trituration only.* 4 *and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

STAPHISAGRIA.

Contractions.—Staph. Stp.

Delphinium Staphisagria, *Linn.* *Nat. ord.*, RANUNCULACEÆ.

Fig.—Flora Hom., pl. 60.

Palmated Larkspur, Stavesacre. German, *Stephanskörner, Laüsesaamen;* French, *Staphisaigre;* Italian, *Stafisagria;* Spanish, *Estafisagria.*

Habitat.—South of Europe.

Flowering time.—April to August.

Parts employed.—The seeds.

Characters. — *Seeds* large, irregularly angular, externally blackish-brown, internally whitish and oily, covered with small indentations. Taste bitter, acrid, burning. Emit a very disagreeable odour when bruised.

Preparation.—Tincture, using rectified spirit. Process I.

Proper forms for dispensing.—*ϕ and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

STICTA.

Contractions.—Stict. Sti.

Sticta pulmonaria, *Hook.* *Nat. ord.*, LICHENES.

Synonyms.—Lobaria pulmonaria (*Linn.*), Lichen pulmonarius, Sticta pulmonacea, Pulmonaria reticulata.

Fig.—Sowerby, Eng. Bot., p. 572.

Lungwort Lichen, Tree Lungwort, Oaklungs. German, *Lungenkraut;* French, *Pulmonaire de Chêne.*

Habitat. — New England, New York, Pennsylvania, and Carolina, U.S.; northern and mountainous counties of England, on the trunks of large trees.

Parts employed.—The entire plant.

Characters.—Leafy, laciniated, obtuse, smooth; above green and pitted, somewhat reticulated; downy beneath; shields mostly marginal.

Preparation. — Tincture, corresponding in alcoholic strength with proof spirit. Process I.

Proper forms for dispensing.—*ϕ and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

STILLINGIA.

Contractions.—Still. Stl.

Stillingia sylvatica, *Willd.* *Nat. ord.*, EUPHORBIACEÆ.

Queen's-root, Queen's Delight, Yaw-root, Silver-leaf.

Habitat.—In pine barrens and sandy soils from Virginia to Florida, and in Mississippi and Louisiana.

Flowering time.—April to July.

Part employed.—The root.

Characters.—A perennial plant, with herbaceous *stem* 2 to 3 feet high, yielding when wounded a milky juice. *Leaves* alternate, sessile, oblong, or lanceolate, obtuse, serrulate, tapering at base, and accompanied with stipules. Male and female *flowers* on the same plant, yellow, and in the form of a spike, the upper part being occupied by the male, the lower by the female. The male florets, scarcely longer than the bracteal scales. *Root* large, thick, and woody, sometimes in long cylindrical pieces, one-third of an inch to an inch or upwards in thickness, wrinkled when dried, externally of a dirty yellowish-brown colour, when cut across exhibiting an interior soft, yellowish, ligneous portion, surrounded by a pinkish-coloured bark. It has a slight, peculiar, somewhat oleaginous odour, which is strong and acrimonious in the fresh root, and the taste is bitterish and pungent, leaving an impression of disagreeable acrimony in the mouth and fauces.

Preparation.— Tincture, corresponding in alcoholic strength with proof spirit. Process I.

Proper forms for dispensing.—*ϕ and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

STRAMONIUM.

Contractions.—Stram. Str.

Datura Stramonium, *Linn.* *Nat. ord.*, SOLANACEÆ.

Synonyms.—D. lurida, Solanum maniacum.

Fig.—Flora. Hom., pl. 61.

Thorn-apple, Devil's-apple, Jamestown Weed. German, *Stechapfel;* French, *Pomme épineuse;* Italian, *Stramonio;* Spanish, *Estramonio.*

Habitat.—Europe, Asia, and North America. Frequent among rubbish heaps in the south of England; probably escaped from gardens.

Flowering time.—Summer and autumn.

Parts employed.—The entire herb.

Characters.—A coarse, glabrous, or slightly downy annual, 1 to 2 feet high, with spreading, forked branches. *Leaves* rather large, ovate, with irregular, angular, or pointed teeth or lobes. *Flowers* solitary, long, funnel-shaped, white, on short peduncles in the forks or at the ends of the branches.

Capsule nearly globular, very prickly, with numerous wrinkled seeds. When bruised the plant emits a fetid narcotic odour. Taste faintly bitter and nauseous.

Time for collecting.—When there are both flowers and fruit.

Preparation. — Tincture, corresponding in alcoholic strength with proof spirit. Process I.

Proper forms for dispensing.—ϕ *and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

Average loss of moisture, 78 per cent.

STRONTIUM CARBONICUM.

Contractions.—Stront. Sto.

Synonyms.—Strontianæ Carbonas. Strontiana Carbonica.

Present name.—Strontic Carbonate. $SrCO_3$.

Carbonate of Strontia. German, *Kohlensaurer Strontian;* French, *Carbonate de strontiane;* Italian, *Carbonato di stronziana.*

May be obtained from the purified Nitrate by precipitation with Carbonate of Ammonia, collecting and carefully washing and drying the precipitate.

Characters and Tests.—A white powder, insoluble in water, readily and entirely dissolved by Nitric Acid diluted with an equal bulk of distilled water, and by Hydrochloric Acid, forming colourless solutions. Either solution, if nearly neutral, when mixed with a solution of Sulphate of Lime, gives a white precipitate after standing a few minutes. If the solution in Nitric Acid be evaporated and allowed to crystallize, the crystals give a brilliant red colour to the blowpipe flame. The solution in Hydrochloric Acid when mixed with an equal volume of absolute alcohol gives no precipitate with Hydrofluosilicic Acid.

Preparation.—Trituration.

Proper forms for dispensing.—1^x *to* 3, *Trituration only.* 4 *and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

STRYCHNINUM.

Contractions.—Strych. Sty.

Present name. — Strychnine or Strychnia. $C_{21}H_{22}N_2O_2$.

An alkaloid contained in *Nux Vomica* and *Ignatia.*

Characters and Tests.—In right square octahedrons or prisms, colourless and inodorous; sparingly soluble in water, but communicating to it its intensely bitter taste; soluble in boiling rectified spirit, in cold spirit of 20 O.P., and in chloroform, but not in absolute alcohol or in ether. Pure Sulphuric Acid forms with it a colourless solution; if a drop of this be placed on the lid of a porcelain crucible and near to it a small crystal of Bichromate of Potash moistened with a drop of strong Sulphuric Acid, and after waiting a minute or so for the chromate to fairly tinge the acid, the latter be then drawn by a glass rod over the Strychnia spot, an intense violet colour is produced, quickly changing to red, and afterwards to yellow. Not coloured by cold Nitric Acid; leaves no ash when burned with free access of air. A very active poison.

Preparations.—Trituration. Solution in 20 O.P. spirit, 1 grain in 200 minims. One measure of this solution, mixed with four measures of 20 O.P. spirit, will form the 3^x attenuation. Rectified spirit is used for all above.

Proper forms for dispensing.—1^x to 3, *Trituration; or* 1 *in* 200 *and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

STRYCHNINUM NITRICUM.

Contractions.—Strych.-n. Sty.-n.

Present name.—Strychnic Nitrate. $C_{21}H_{22}N_2O_2.HNO_3$. Nitrate of Strychnia.

Prepared by neutralising a very weak solution of Nitric Acid with pure Strychnia and crystallizing.

Characters and Tests.—In fine, shining, crystalline needles or prisms, colourless, transparent, and inodorous; sparingly soluble in cold water, forming an intensely bitter neutral solution; soluble also in spirit of 20 O.P. but not in absolute alcohol or in ether. If a crystal be placed on a porcelain surface, and moistened with a drop of strong Sulphuric Acid, and near to it a small crystal of Bichromate of Potash, also moistened with the same acid, and after waiting a minute or so for the chromate to fairly tinge the acid, the latter be then drawn by a glass rod over the Strychnia spot, an intense violet colour is produced, quickly changing to red and afterwards to yellow. The aqueous solution when mixed with an equal volume of strong Sulphuric Acid acquires a deep yellow, but not a red colour. Leaves no ash when burned with free access of air. A very active poison.

Preparation.—Solution in dilute alcohol for 1, using rectified spirit for all above.

Proper forms for dispensing.—1 *and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

STRYCHNINUM PHOSPHORICUM.

Contractions.—Strych.-ph. Sty.-ph.

Present name. — Acid Phosphate of Strychnine or Strychnia. $C_{21}H_{22}N_2O_2.H_3PO_4.2H_2O$.

Phosphate of Strychnia.

Prepared by dissolving pure Strychnia in moderately diluted Phosphoric Acid and crystallizing.

Characters and Tests.—In radiated groups of shining crystalline needles or prisms, colourless, transparent, and inodorous; readily soluble in cold water, and forming an intensely bitter solution, which reddens litmus, and gives a pale yellow precipitate with Nitrate of Silver; soluble in spirit of 20 O.P., but not in absolute alcohol or in ether. Strong Sulphuric Acid forms with it a colourless solution; if a drop of this be placed on a porcelain surface, and near to it a small crystal of Bichromate of Potash moistened with a drop of strong Sulphuric Acid, and after waiting a minute or so for the chromate to fairly tinge the acid, the latter be then drawn by a glass rod over the Strychnia spot, an intense violet colour is produced, quickly changing to red and afterwards to yellow. A very active poison.

Preparations.—Solution in dilute alcohol for 1, using rectified spirit for all above.

Proper forms for dispensing.—1 *and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

STRYCHNINUM SULPHURICUM.

Contractions.—Strych.-s. Sty.-s.

Present name. — Normal Sulphate of Strychnine or Strychnia. $(C_{21}H_{22}N_2O_2)_2H_2SO_4.7H_2O$.

Sulphate of Strychnia.

Prepared by neutralising diluted Sulphuric Acid with pure Strychnia and crystallizing.

Characters and Tests.—Large four-sided prisms, colourless, having a glassy lustre but becoming dull in the air, and melting in their own water of crystallization at a gentle heat; freely soluble in cold water, forming an intensely bitter solution, which is neutral to test paper; soluble also in spirit of 20 O.P., but not in absolute alcohol or in ether. Strong Sulphuric Acid forms with it a colourless solution; if a drop of this be placed on a porcelain surface and near to it a small crystal of Bichromate of Potash moistened with a drop of strong Sulphuric Acid, and, after waiting a minute or so for the chromate to fairly tinge the acid, the latter be then drawn by a glass rod over the Strychnia spot, an intense violet colour is produced, quickly changing to red and afterwards to yellow. Its aqueous solution gives a white precipitate with Chloride of Barium. Leaves no ash when burned with free access of air. A very active poison.

Preparation. — Solution in distilled water to which 5 per cent. of rectified spirit has been added for 1, using dilute alcohol for 3^x and rectified spirit for all above.

Proper forms for dispensing.—1 *and* 3^x *Solution only.* 2 *and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

SULPHUR.

Contractions.—Sulph. Sul.

Common Brimstone. S. German, *Schwefel;* French, *Soufre;* Italian, *Zolfo;* Spanish, *Azufre.*

The well-known Flowers of Sulphur carefully washed with distilled water and dried in the air.

Characters and Tests.—A slightly gritty powder of a fine greenish-yellow colour, without taste and without odour, unless heated; burning in open vessels with a blue flame and the evolution of Sulphurous Acid gas. Entirely volatilized by heat; does not redden moistened litmus paper. Solution of Ammonia agitated with it, and filtered, does not on evaporation leave any residue.

Preparations. — Trituration. Saturated solution in absolute alcohol, which must be labelled *Tinctura Sulphuris Fortissima.*

N.B.—Since a permanent solution of 1 grain of Sulphur cannot be effected at a temperature of 60° F. in less than 2,720 grain measures of absolute alcohol, sp. gr. 0·7979, and precipitation takes place on the least fall of temperature, thereby rendering the solution extremely weak and indefinite in strength, it will be seen that no satisfactory attenuations are obtainable from the above solution. In future it will be recognized by the name above given.

Proper forms for dispensing.—1^x *to* 3, *Trituration only.* 4 *and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

Tinctura Sulphuris Fort., *Tincture, Tincture-trituration, Pilules, or Globules.*

SULPHUR IODATUM.

Contractions.—Sulph-iod. Su-i.

Synonym.—Sulphuris Iodidum.

Present name.—Sulphur Iodide. S_2I_2.

Iodide of Sulphur. German, *Jodschwefel;* French, *Iodure de soufre.*

Take of Iodine	- - -	4 ounces;
Sublimed Sulphur	- -	1 ounce.

Rub them together in a Wedgwood mortar until they are thoroughly mixed. Put the mixture into a flask, close the orifice loosely, and apply a gentle heat, so that the colour of the mass shall become gradually darkened. When the colour has become uniformly dark throughout, increase the heat so as to produce liquefaction; then incline the flask in different directions in order to return into the liquid any portion of the iodine which may have been condensed on the inner surface of the vessel. Lastly, withdraw the heat, and when the liquid has congealed, remove the mass by breaking the flask ; reduce it to pieces, and keep these in a well-stoppered amber glass bottle.

Characters and Tests.—A greyish-black, solid substance, with a radiated crystalline appearance. It resembles Iodine in smell, and in the property of staining the cuticle when applied to it. Soluble in about 60 parts of glycerine; insoluble in water, but decomposed when boiled with it. If 100 grains be thoroughly boiled with water, the Iodine will pass off in vapour, and about 20 grains of Sulphur will remain.

Preparation.—Trituration.

Proper forms for dispensing.—1^x *to* 3, *Trituration only.* 4 *and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

SUMBUL.

Contraction.—Sum.

Ferula (Euryangium) Sumbul, *Hook.* *Nat. ord.*, UMBELLIFERÆ.

Synonyms.—Sumbulus moschatus, Jatamansi.

Fig.—Bot. Mag., 1875, t. 6196.

Musk-root. German, *Moschus Wurzel ;* French, *Racine de Sambula.*

Till recently the botanical source of Sumbul root was unknown. It has been used in the East as a perfume and incense in religious ceremonies, as well as medicinally. It is usually taken to St. Petersburg, and from thence to other parts of Europe.

Habitat.—Turkestan. Mountains east of Samarkand at an elevation of 3,000 or 4,000 feet.

Part employed.—The root as imported.

Characters.—In the form of transverse sections from 2 to

4 or 5 inches in diameter, and from 1 to 1½ inch in length, with a dusky light brown wrinkled epidermis and an interior porous structure, consisting of coarse, irregular, easily separable fibres. The fresh-cut surface of a transverse section presents, within the epidermis, an exterior white and spotted layer, and an inner yellow substance which forms the greater part of the root. The odour resembles musk; the taste, at first sweetish, becomes bitterish and balsamic. Some brought from India is of a closer texture than that from Russia, and of a reddish tint.

Preparations.—Tincture, using proof spirit. Process I. Trituration.

Proper forms for dispensing.—*ϕ and upwards, Tincture, Tincture-trituration, Pilules, or Globules.* 1^x *to 3, Trituration.*

TABACUM.

Contractions.—Tabac. Tab.

Nicotiana Tabacum, *Linn.* *Nat. ord.*, SOLANACEÆ.

Tobacco. German, *Tabak;* French, *Tabac;* Italian, *Tabacco;* Spanish, *Tabaco.*

Habitat.—America, and cultivated largely there and elsewhere.

Parts employed.—The fresh leaves.

Characters.—An annual, from 3 to 6 feet high. *Leaves*, large, ovate, or lanceolate, acuminate, pale green, bearing numerous short glandular hairs. *Calyx* bell-shaped, hairy, somewhat viscid, and divided at its summit into 5 pointed segments. *Corolla* tube twice as long as the calyx, of a greenish hue, swelling at the top into an oblong cup, and ultimately expanding into a 5-lobed, plaited, rose-coloured border; the whole corolla is very viscid. When dry, the leaves are of a mottled brown colour, having a peculiar well-known odour and nauseous-bitter, acrid taste. When distilled with a solution of Potash, they yield an alkaline fluid, which has the peculiar odour of Nicotine, and precipitates with Perchloride of Platinum and Tincture of Galls.

Time for collecting. — Before the flowers are developed.

Preparation. — Tincture, corresponding in alcoholic strength with dilute alcohol. Process I.

Proper forms for dispensing.—*ϕ and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

Average loss of moisture, 84 per cent.

TAMUS.

Contraction.—Tam.

Tamus communis, *Linn.* *Nat. ord.*, DIOSCOREACEÆ.

Fig.—Eng. Bot., t. 91.

Black Bryony. German, *Schmeerwurz.*

Habitat.—Hedges and open woods and bushy places in west central and southern Europe, extending to the Caucasus. Common in England.

Flowering time.—Spring and early summer.

Part employed.—The fresh root.

Characters.—An elegant climber, extending a considerable distance over hedges and bushes; easily known by its bright shining heart-shaped leaves, with a tapering point, and sometimes almost 3-lobed, but otherwise entire. *Flowers* small, of a yellowish green. Berries scarlet, often very numerous. *Root-stock* large and fleshy, having a greasy appearance internally, and of a light colour; externally of a dark brown, giving out numerous fibres.

Preparation. — Tincture, corresponding in alcoholic strength with proof spirit. Process II.

The ϕ tincture only has been hitherto used as an outward application.

Average loss of moisture, 76 per cent.

TANACETUM.

Contractions.—Tanac. Tan.

Tanacetum vulgare, *Linn.* *Nat. ord.*, COMPOSITÆ.

Tansy. German, *Gemeiner Rainfarn;* French, *Tanaisie commune;* Italian and Spanish, *Tanaceto.*

Habitat.—Edges of fields, roadsides, and waste places in Europe and Russian Asia; common in Britain.

Flowering time.—End of summer.

Parts employed.—The fresh plant.

Characters.—A stout, erect perennial, 2 to 3 feet high, glabrous or slightly downy, with a strong scent and bitter savour. *Root-stock* creeping. *Leaves* rather large, pinnate, with oblong-linear, pinnatifid or toothed segments. *Flower-heads* numerous, hemispherical, about 4 lines diameter, of a golden yellow, in a large terminal corymb.

Time for collecting.—When in flower.

Preparation. — Tincture, corresponding in alcoholic strength with 20 O.P. spirit. Process I.

Proper forms for dispensing.—ϕ *and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

TARAXACUM.

Contractions.—Tarax. Trx.

Taraxacum Dens-leonis, *Desf.* *Nat. ord.*, COMPOSITÆ.

Synonym.—Leontodon Taraxacum. Taraxacum officinale.

Fig.—Flora Hom., pl. 62.

Dandelion. German, *Löwenzahn;* French, *Dent de Lion, Pissenlit;* Italian, *Tarassaco, Macerone;* Spanish, *Diente de Leon.*

Habitat.—Throughout Europe, Russian and central Asia, and northern America. A very common weed.

Flowering time.—All the summer.

Parts employed.—The entire plant.

Characters.—A thick tap root, black on the outside, very bitter. *Leaves* radical, varying from linear-lanceolate and almost entire to deeply pinnatifid, with broad triangular lobes usually pointing downwards, terminal one larger, obovate or acute. *Peduncles* 2 to 8 inches high, involucral bracts linear, often with a tooth on the back below the point. *Achenes* not compressed, striated, the beak two or three times as long as the achene itself.

Time for collecting.—Spring, before the commencement of flowering.

Preparation.—Tincture, corresponding in alcoholic strength with proof spirit. Process I.

Proper forms for dispensing.—ϕ *and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

Average loss of moisture, 76 per cent.

TARENTULA.

Lycosa Tarentula, *Latr.*

Class, ARACHNIDA; *Order,* ARANEIDEA; *Tribe,* OCTONOCULINA; *Family,* LYCOSIDÆ.

Synonym.—Aranea tarentula, *Linn.*

Tarantula.

Fig.—Wood's Nat. Hist., Illustrated, (1874) Reptiles, &c. p. 657.

Habitat.—Italy and south of Europe.

Parts employed.—The entire living spider.

Characters of genus.—Third pair of legs shortest. Eyes (⁘).

Characters of species.—One of the largest of European spiders. Upper part of the body greyish-brown; margin of the thorax grey, with a radiated dorsal line of the same colour; anterior part of the dorsum of the abdomen marked with triangular spots; belly of a fine deep saffron colour, with a transverse black band.

Preparation.—Tincture, by maceration for ten or twelve days in proof spirit.

The animals should be first crushed in a mortar and then covered with half the requisite quantity of spirit, triturated for a few minutes and the mixture transferred to a macerating bottle. The mortar and pestle should then be washed with the remainder of the spirit, the washings poured into the bottle and the latter well shaken daily.

TELLURIUM.

Contractions.—Tellur. Tel.

Tellurium. Te.

May be obtained very easily by heating to whiteness in a covered crucible a mixture of equal weights of the powdered Tellurium ore of Chemnitz in Hungary, and dry Carbonate of Soda. The fused mass is dissolved in water and the solution, when freely exposed to the air, deposits the

Tellurium, which may be purified by washing, drying and distillation.

Characters and Tests.—Though possessing a high metallic lustre, like Bismuth, this element is closely allied to Sulphur and Selenium. It is very brittle, fuses between 800° and 900°, and at a higher temperature is converted into a yellow vapour. When heated strongly in the open air it burns with a blue flame edged with green, and emits a peculiar characteristic odour, while dense white fumes of Tellurous Anhydride are given off. Soluble in Nitric Acid, forming a clear solution which gives with Sulphuretted Hydrogen, a brown precipitate freely and entirely soluble in Sulphide of Ammonium.

Preparation.—Trituration.

Proper forms for dispensing.—1^x *to* 3, *Trituration only.* 4 *and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

TEREBINTHINA.

Contractions.—Tereb. Ter.

Oleum Terebinthinæ.

Oil of Turpentine. $C_{10}H_{16}$. German, *Terpenthinöl;* French, *Huile volatile de terebenthine;* Italian, *Olio della trementina;* Spanish, *Aceyte de trementina.*

The oil distilled from the oleo-resin (Turpentine) obtained from several species of *Pinus.* Purified by repeated rectification with water.

Characters.—Limpid, colourless, pungent, with a strong peculiar but well-known odour, and pungent and bitter taste.

Preparation.—Solution in rectified spirit for 1^x and upwards.

Proper forms for dispensing.—1^x *and upwards, Tincture, Pilules, or Globules.*

TEUCRIUM.

Contractions.—Teucr. Teu.

Teucrium Marum, *Linn.* *Nat ord.*, LABIATÆ.

Synonyms.—Marum verum, M. syriacum, Marjorana syriaca.

Fig.—Woodville's Med. Bot., vol. i., pl. 56.

Cat-thyme. German, *Katzenkraut;* French, *Germandrée maritime.*

Habitat.—The Levant and all along the Mediterranean. It is also cultivated in gardens.

Flowering time.—June to August.

Parts employed.—The entire herb, fresh or dry.

Characters.—*Stems* numerous, slender, ligneous, branching, woolly, above a foot high. *Leaves* opposite, the upper ones entire, the lower ones obscurely lobed, ovate, acute, petiolate; upper surface pale green, white and downy underneath; the footstalks become gradually elongated towards the lower part of the stem. *Flowers* of a pale purple colour, in spikes, all on the same side, in pairs, upon short peduncles. Upper lip of the corolla short, erect, and divided to the base, by which it seems lost in the under lip which is long and separated into 6 lobes, the outermost being the largest. Calyx tubular, whitish, woolly, with 5 short pointed teeth. The whole plant has an aromatic camphorous odour, which is peculiarly agreeable to cats; taste bitter, acrid, and hot.

Time for collecting. — When in flower and young seed.

Preparation. — Tincture, corresponding in alcoholic strength with proof spirit. Process I.

Proper forms for dispensing.—*ϕ and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

THERIDION.

Contractions.—Therid. Thr.

Theridion curassavicum, *Walk.*

Class, ARACHNIDA ; *Order*, ARANEIDEA ; *Tribe*, OCTONOCULINA ; *Family*, AGELENIDÆ.

Black Spider of Curaçao. German, *Feuerspinnchen ;* French, *Araignée noire du Curaçao ;* Native name, *Aranja.*

Habitat.—West Indies. Found on orange-trees.

Part employed.—The entire living spider.

Characters.—Its body is the size of a cherry-stone, with a black chest ; the feet are likewise black and covered with short and stiff hairs. It is distinguished by three points of a lively, orange red, placed at the back part of the body, and the largest of which, above the anus, is of the size of a pin's head. The youngest are of a beautiful velvet-black, marked with several white lines, composed of drop-like points from before backwards. The females are marked with similar stripes, but larger, and disposed in cross-form, of a yellow colour ; the middle stripe terminates in the spot above the anus. On their bellies they all have a square, yellow spot, which is notched on the edges and occupies nearly the whole extent of the belly.

Preparation.—Tincture, by maceration for ten or twelve days in proof spirit. It is recommended to use one spider to every 50 minims of proof spirit. The animals should be first crushed in a mortar and then covered with half the spirit, triturated for a few minutes, and the mixture transferred to a macerating bottle. The mortar and pestle should then be washed with the remainder of the spirit, the washings poured into the bottle and the latter well shaken daily.

Proper forms for dispensing.—*ϕ and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

THUJA.

Contraction.—Thu.

Thuja occidentalis, *Willd.* *Nat. ord.*, CONIFERÆ.

Synonyms.—Arbor Vitæ, Cedrus Lycea.

Fig.—Flora Hom., pl. 73.

American Arbor Vitæ. German, *Abendländischer Lebensbaum ;* French, *Thuja du Canada.*

Habitat.—Canada and United States. Extensively cultivated as an evergreen.

Flowering time.—May and June.

Parts employed.—The young shoots.

Characters. — Young shoots compressed, vertical, covered with closely imbricated leaves, which are small, obtuse, with a point, smooth; those of the 2 opposite rows compressed and keeled; the intermediate ones flat, with a glandular point or cell of resin at the back. When rubbed between the hands it gives off a peculiar aromatic resinous odour.

Time for collecting.—At the commencement of flowering.

Preparation. — Tincture, corresponding in alcoholic strength with 20 O.P. spirit. Process I.

Proper forms for dispensing.—*ϕ and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

Average loss of moisture, 58 per cent.

URANIUM NITRICUM.

Contractions.—Uran-n. Ur-n.

Synonym.—Uranii Nitras.

Present name. — Uranic Nitrate, or Uranyl Nitrate. $(UO_2)''(NO_3)_2.6H_2O$.

Nitrate of Uranium.

The metal *Uranium* is generally procured from *Pitchblende.* The nitrate may be obtained by treating the pure metal or any of its oxides with Nitric Acid.

Characters and Tests.—Lemon-yellow, prismatic crystals, efflorescent in dry, and deliquescent in moist air; soluble in water, alcohol, and ether, forming greenish yellow, highly fluorescent solutions. The aqueous solution gives a yellow precipitate with Ammonia, no blue colour being produced by an excess of the reagent; a hair-brown precipitate with yellow Prussiate of Potash and a yellowish-brown precipitate with Sulphide of Ammonium. Sulphuretted Hydrogen causes no precipitate.

Preparations.—Solution in distilled water for 1^x, using dilute alcohol for 1, and rectified spirit for all above. Trituration.

N.B.—These should be prepared by artificial light, and preserved in amber glass phials.

Proper forms for dispensing.—1^x *and* 1, *Solution.* 3^x *and upwards, Tincture, Tincture-trituration, Pilules, or Globules; or,* 1^x *to* 3, *Trituration.*

URTICA URENS.

Contractions.—Urt-u. Urt.

Urtica urens, *Linn.* *Nat. ord.*, URTICACEÆ.

Fig.—Eng. Bot., t. 1236.

Small Stinging Nettle. German, *Brennnessel;* French, *Ortie grièche.*

Flowering time.—The whole summer.

Parts employed.—The fresh herb.

Characters.—An erect branching annual, seldom above 1 foot high, glabrous with the exception of the stiff stinging hairs. *Leaves* ovate or elliptical, deeply and regularly toothed, more tender than in the other species. *Flowers*, male and female intermixed, in small, loose, almost sessile, axillary clusters.

Time for collecting.—When in flower and seed.

Preparation. — Tincture, corresponding in alcoholic strength with proof spirit. Process I.

Proper forms for dispensing.—*ϕ and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

Average loss of moisture, 79 per cent.

UVA URSI.

Contractions.—Uva-urs. Uva.

Arctostaphylos Uva-ursi, *Spreng. Nat. ord.*, ERICACEÆ.

Synonyms.—Arbutus Uva ursi, A. buxifolia.

Fig.—Engl. Bot., t. 714.

Bearberry. German, *Bärentraube;* French, *Arbousier, Busserole;* Italian, *Corbezzolo;* Spanish, *Gayuba.*

Habitat. — Dry, heathy and rocky hills, over a great part of central and northern Europe, Russian Asia, and northern America; Scotland, north of England, and Ireland.

Flowering time.—Spring.

Parts employed.—The leaves.

Characters.—The plant is rather like the Cowberry, but the sepals are at the base of the berry instead of crowning it. The procumbent stems form large masses, with numerous shining, evergreen *leaves*, which are obovate or oblong, entire, coriaceous, about three-fourths of an inch in length, reticulated beneath; with a strong astringent taste, and a feeble hay-like odour when dried and powdered, the infusion giving a bluish-black precipitate with Perchloride of Iron. Leaves not dotted beneath nor toothed on the margin. The *flowers* 4 to 6 together, in compact, drooping, terminal racemes.

Time for collecting.—At the beginning of flowering.

Preparation. — Tincture, corresponding in alcoholic strength with proof spirit. Process I.

Proper forms for dispensing.—*ϕ and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

VALERIANA.

Contractions.—Valer. Val.

Valeriana officinalis, *Linn.* *Nat. ord.*, VALERIANACEÆ.

Synonyms.—V. sylvestris major, Phu parvum.

Fig.—Flora Hom., pl. 64.

Wild Valerian, Heal-all. German, *Baldrian*; French, *Valériane*; Italian, *Valeriana*; Spanish, *Valerian.*

Habitat.—In moist situations and damp woods, over the whole of Europe and Russian Asia. Successfully cultivated in North America.

Flowering time.—Summer.

Part employed.—The root.

Characters.—*Rhizome* short, yellowish white, with numerous fibrous roots about 2 or 3 inches long; of a bitter taste and penetrating odour, agreeable in the recent root, becoming fetid by keeping. When distilled with water, it yields valerianic acid and a volatile oil. *Stem* erect, 2 to 4 feet high, nearly simple, hairy at the base. *Leaves* opposite, pinnate, with lanceolate segments, 1 to 3 inches long and varying much in breadth, coarsely toothed and hairy underneath; upper leaves few and distant. *Flowers* small, white, or pinkish, in broad terminal corymbs. *Corolla* with a short tube, not spurred, and 5 short lobes. *Stamens* 3.

Time for collecting.—In the autumn, or at the beginning of flowering.

Preparation. — Tincture, corresponding in alcoholic strength with proof spirit. Process I.

Proper forms for dispensing.—*ϕ and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

Average loss of moisture, 55 per cent.

VERATRUM.

Contractions.—Verat. Ver.

Veratrum album, *Linn.* *Nat. ord.*, MELANTHACEÆ.

Synonyms.—Helleborus albus, H. præcox.

Fig.—Flora. Hom., pl. 65.

White Hellebore. German, *Weisse Niesswurzel;* French, *Ellébore blanc;* Italian, *Elleboro bianco;* Spanish, *Verdegambra blanco.*

Habitat.—Pasture-lands in Alpine, Pyrenean, and other mountainous localities in Europe.

Flowering time.—From June to August.

Part employed.—The root.

Characters.—Root-stock fusiform, 1 to 3 inches long by an inch or less in diameter, greyish-brown externally, pale yellowish-grey within, beset with long cylindrical fibres of a greyish colour, as well as some soft, fine, hair-like fibres. Taste at first sweetish, afterwards bitterish, acrid, and durable.

Time for collecting.—Early in June, before flowering.

Preparation. — Tincture, using 20 O.P. spirit. Process I.

Proper forms for dispensing.—*ϕ and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

VERATRUM VIRIDE.

Contractions.—Ver-v. Ve-v.

Veratrum viride, *Willd.* *Nat. ord.*, MELANTHACEÆ.

Synonym.—Helonias viridis.

Fig.—Bigelow, Amer. Med. Bot., pl. 33.

American Hellebore, Green Hellebore, Itch-weed.

Habitat.—Swamps, low grounds, moist meadows, and by brooks in rocky and mountainous situations from Canada to Carolina.

Flowering time.—May to July.

Part employed.—The root.

Characters.—Closely resembles the *Veratrum album ;* it is a smoother plant, and differs slightly in its flowers, branches, and stalks. *Root* thick and fleshy, upper portion truncated. The long cylindrical fibres, when dry, are of a pale yellowish colour, and much wrinkled. Taste bitter, acrid, and durable. *Stem* 3 to 5 feet high. *Leaves*, lower ones large, oval, acuminate, sheathing.

Time for collecting.—In the autumn.

Preparations.—Tincture of the fresh root imported from North America. Tincture of the dried root, using 20 O.P. spirit. Process I.

Proper forms for dispensing.—*ϕ and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

VERBASCUM.

Contractions.—Verbas. Vrb.

Verbascum Thapsus, *Linn.* *Nat ord.*, SCROPHULARIACEÆ.

Synonym.—Thapsus barbatus.

Fig.—Flora Hom., pl. 66.

Great Mullein, Long Taper. German, *Königskerze Wellkraut;* French, *Molène, Bouillon blanc;* Italian, *Verbasco;* Spanish, *Gordolobo.*

Habitat.—Roadsides and waste places all over Europe and temperate Asia; also in North America.

Flowering time.—Summer.

Parts employed.—The fresh herb.

Characters.—A stout erect biennial, simple or branched, 2 to 4 feet high, clothed with soft woolly hairs. *Leaves* oblong, pointed, slightly toothed, narrowed at the base into 2 wings running a long way down the stem; lower ones often stalked. *Flowers* in a dense, woolly, terminal spike. Corolla yellow, $\frac{3}{4}$ inch in diameter, slightly concave; 3 of the filaments are covered with yellowish woolly hairs, the other 2 longer and nearly smooth.

Time for collecting.—At the beginning of flowering.

Preparation. — Tincture, corresponding in alcoholic strength with proof spirit. Process I.

Proper forms for dispensing.—ϕ *and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

Average loss of moisture, 74 per cent.

VIOLA ODORATA.

Contractions.—Viol-od. Vi-o.

Viola odorata, *Linn.* *Nat. ord.*, VIOLACEÆ.

Synonym.—V. Martia.

Fig.—Engl. Bot., t. 619.

Sweet Violet. German, *Veilchen;* French, *Violette de Mars;* Italian, *Violetta;* Spanish, *Violeta.*

Habitat. — On banks, under hedges, in woods, &c., widely spread over Europe and Russian Asia. Common in Britain.

Flowering time.—Early spring.

Parts employed.—The entire fresh plant.

Characters. — *Perennial stock* short, sometimes branched, knotted with remains of old leaf-stalks, emitting creeping runners. *Leaves* in terminal tufts, broadly cordate, rounded at top, crenate, downy or shortly hairy, with rather long stalks. Stipules narrow-lanceolate or linear, entire. *Peduncles* as long as leaf-stalks, with a pair of small bracts half-way up. *Flowers* nodding, violet or white, sweet-scented. Sepals obtuse. Spur on lower petal short. Stigma pointed, horizontal, or turned downwards.

Time for collecting.—When in flower and young seed.

Preparation. — Tincture, corresponding in alcoholic strength with proof spirit. Process II.

Proper forms for dispensing.—*ϕ and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

Average loss of moisture, 77 per cent.

VIOLA TRICOLOR.

Contractions.—Viol-tr. Vi-t.

Viola tricolor, *Linn.* *Nat. ord.*, VIOLACEÆ.

Synonym.—V. arvensis.

Fig.—Engl. Bot., t. 1287.

Heart's-ease, Pansy. German, *Stiefmütterchen ;* French, *Pensée, Fleur de la Trinité.*

Habitat. — Hilly pastures and banks, cultivated and waste places throughout Europe and Russian Asia. Abundant in Britain.

Flowering time.—From spring till autumn.

Parts employed.—The entire plant.

Characters.—Very variable, but easily recognized by the branching stem, the large leaf-like stipules deeply divided into several linear or oblong lobes, the central or terminal one the largest, broadest, or most obtuse, and by the style, thickened at the top into an almost globular, oblique stigma. *Flowers* purple, whitish or yellow, or with a mixture of these colours, the two upper pairs of petals slightly overlapping each other, the lower petal always broadest, and generally yellow at the base.

Time for collecting.—When in flower and young seed.

Preparation. — Tincture, corresponding in alcoholic strength with proof spirit. Process II.

Proper forms for dispensing. — *ϕ and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

Average loss of moisture, 73 per cent.

XANTHOXYLUM.

Contractions.—Xanthox. Xan.

Xanthoxylum fraxineum, *Willd. Nat. ord.*, XANTHOXYLACEÆ.

Synonyms.—X. americanum, X. fraxinifolium, X. ramiflorum, X. mite.

Fig.—Bigelow, Amer. Med. Bot., pl. 59.

Prickly Ash, Toothache-tree. German, *Zahnwehbaum;* French, *Claralier.*

Habitat.—Canada to Virginia, and west to the Mississippi.

Flowering time.—April and May.

Parts employed.—The bark and berries.

Characters.—The *bark* met with in the market is in fragments of various sizes, quilled, a line or two in thickness, with a light ash-coloured epidermis, which is frequently removed; internally, whitish or glossy; that from the small branches frequently exhibits the prickles. It is faintly odorous, very light, friable with an amylaceous fracture, and has a slightly aromatic taste, succeeded by bitterness and a persistent acridity. The dry *fruit* consists of an open, bivalved, oval capsule, about 3 lines in length and 2 in diameter, and covered with excavated dots externally; whitish-yellow and smooth internally, enclosing an oval, shining black, wrinkled seed, which is hollow and greyish-yellow internally, inodorous, very brittle, and having the peculiar taste of the capsule in a very faint degree.

Time for collecting.—In the autumn.

Preparations. — Tincture of the bark, using rectified spirit. Tincture of the ripe berries, using rectified spirit. Process I in either case.

Proper forms for dispensing. — *φ and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

ZINCUM.

Contractions.—Zinc. Zin.

Zinc. Zn. German, *Zink;* French, *Zinc;* Italian and Spanish, *Zinco.*

Pure re-distilled metallic zinc reduced to powder by rubbing it in a mortar under distilled water. The purity of the metal should be first ascertained by the following

Characters and Tests. — A bluish white metal which soon tarnishes in the air and exhibits a crystalline fracture; fuses at about 773°, and volatilises at a bright red heat. Soluble without residue in dilute Sulphuric Acid, forming a colourless solution which, when sufficiently acid, gives no precipitate with Sulphuretted Hydrogen. The solution, after it has been boiled for a few minutes with a little Nitric Acid, yields with Ammonia a white precipitate which is entirely soluble without colour in an excess of the reagent, and the resulting solution gives a white precipitate with Sulphide of Ammonium.

Preparation.—Trituration.

Proper forms for dispensing.—1^x *to* 3, *Trituration only.* 4 *and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

ZINCUM OXYDATUM.

Contractions.—Zinc-ox. Zn-o.

Synonym.—Zinci Oxidum.

Present name.—Zincic Oxide. ZnO.

Oxide of Zinc. German, *Zink Oxyd;* French, *Oxide de zinc;* Italian, *Ossido di zinco.*

Obtained by exposing pure Carbonate of Zinc to a dull red heat until it no longer effervesces when dropped into diluted Sulphuric Acid. The carbonate is obtained by precipitation from the sulphate by carbonate of soda.

Characters and Tests.—A soft, nearly white, tasteless and inodorous powder, becoming pale yellow when heated. Dissolves without effervescence or residue in diluted Nitric Acid, forming a solution which is not affected by Chloride of Barium or Nitrate of Silver, and gives with Carbonate of Ammonia a white precipitate which dissolves entirely without colour in an excess of the reagent, forming a solution which is precipitated white by Sulphide of Ammonium.

Preparation.—Trituration.

Proper forms for dispensing.—1^x *to* 3, *Trituration only.* 4 *and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

ZINCUM SULPHURICUM.

Contractions.—Zinc.-s. Zn-s.

Synonym.—Zinci Sulphas.

Present name.—Zincic Sulphate. $ZnSO_4.7H_2O$.

Sulphate of Zinc. White Vitriol. German, *Schwefelsaures Zink;* French, *Sulfate de zinc, Vitriol blanc;* Italian, *Solfato di zinco.*

May be obtained by dissolving the pure metal in diluted Sulphuric Acid and crystallizing.

Characters and Tests.—In colourless transparent prismatic crystals with a strong metallic styptic taste. Its solution in water gives white precipitates with Chloride of Barium and Sulphide of Ammonium. Its watery solution is not tinged purple by Tincture of Galls, and when acidulated with Sulphuric or Hydrochloric Acid gives no precipitate with Sulphuretted Hydrogen. After it has been boiled for a few minutes with a little Nitric Acid, it yields with Ammonia a white precipitate which is entirely soluble without colour in an excess of the reagent.

Preparation.—Solution in distilled water for 1^x; dilute alcohol must be used for 1 and 3^x, 20 O.P. spirit for 2, and rectified spirit for all above.

Proper forms for dispensing.—1^x *to* 3^x, *Solution only.* 2 *and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

ZINGIBER.

Contractions.—Zing. Zng.

Zingiber officinale, *Roscoe.* *Nat. ord.*, ZINGIBERACEÆ.

Synonym.—Amomum Zingiber.

Fig.—Woodville's Med. Bot., pl. 11.

Ginger. German, *Ingwer;* French, *Gingembre;* Italian, *Zenzero;* Spanish, *Gengibre.*

Habitat.—Hindostan. Cultivated in East and West Indies.

Part employed.—The scraped and dried rhizome as imported.

Characters. — Irregular lobed decorticated pieces 3 or 4 inches long, sub-compressed, yellowish-white but not chalky on the surface, with a short mealy fracture, hot taste, and agreeable aroma. Powder yellowish white.

Preparation.—Tincture, using rectified spirit. Process I.

Proper forms for dispensing.—*ϕ and upwards, Tincture, Tincture-trituration, Pilules, or Globules.*

PART III.

EXTERNAL APPLICATIONS.

Hahnemann did not generally approve of the external use of medicines, and the *British Homœopathic Society* does not wish to commit itself as a body to their recommendation; since, however, many of its members and their colleagues are daily in the habit of employing them, it has been considered advisable to furnish the chemists with the best formulæ for making such preparations, as the demand for them is well known to be considerable.

In these remarks it is not to be understood that Hahnemann and his followers consider local applications, *per se*, to be of questionable utility, but the point at issue is, how far the homœopathic medicines act when thus applied, and how far the benefit is traceable to the menstruum and the manner of the application. For example, in rubbing in an opodeldoc or liniment containing a certain amount of a homœopathic medicine, it is difficult to apportion the benefit between the medicine and the friction. In using a medicated ointment the unctuous matter may have much to do with the result, while if a lotion is used it may benefit the case either by cooling if spirituous, or by acting after the manner of a wet compress if its moisture is mechanically retained.

No attempt will be made to enumerate all the various medicines which have been used locally; all that is necessary is to give approved recipes for the following general forms, which can then be medicated by any remedy desired, and a description of the substances used in their preparation. These general forms are, *Glyceroles*, *Ointments*, *Liniments*, *Lotions*, *Opodeldocs*, *Plaisters*, and *Injections*.

ADEPS PRÆPARATUS.

Synonym.—Axungia.

Prepared Lard.

The purified fat of the hog, *Sus scrofa*, Linn.

Take of The internal fat of the abdomen of the hog, perfectly fresh - - -	14 pounds.

Remove as much of the membranes as possible, cut the fat into small pieces, put it into a suitable vessel with about 4 gallons of cold water, and, while a current of water is running through the vessel, break up the masses of fat with the hands, exposing every part to the water, so that whatever is soluble may be thus dissolved and carried away. Afterwards collect the washed fat on a sieve or in a cloth, drain away as much as possible of the water, liquefy the fat at a heat not exceeding 212° and strain through flannel, pressing the residue while hot, then put it into a pan heated by steam and keep it at a temperature a little but not much above 212°, stirring it continually, until it becomes clear and entirely free from water; finally strain it through flannel.

Characters and Tests.—A soft white fatty substance, melting at about 100°. Has no rancid odour; dissolves entirely in ether. Distilled water in which it has been boiled, when cooled and filtered, gives no precipitate with Nitrate of Silver, and is not rendered blue by the addition of solution of Iodine.

AMYLUM.

Starch.

The starch procured from the seeds of common wheat, *Triticum vulgare,* Villars.

Characters and Tests.—In white columnar masses. When rubbed in a Wedgwood mortar with a little cold distilled water, it is neither acid nor alkaline to test paper, and the filtered liquid does not become blue on the addition of solution of Iodine. Mixed with boiling water and cooled, it gives a deep blue colour with Iodine.

CERA ALBA.

White Wax.

Yellow wax bleached by exposure to moisture, air, and light.

Characters.—Hard, nearly white, translucent. Not unctuous to the touch ; does not melt under 150°.

CETACEUM.

Spermaceti.

Nearly pure Cetine, obtained, mixed with oil, from the head of the Sperm Whale, *Physeter macrocephalus,* Linn., inhabiting the Pacific and Indian Oceans. It is separated from the oil by filtration and pressure, and afterwards purified.

Characters and Tests.—Crystalline, pearly white, glistening, translucent, with little taste or odour, reducible to powder by the addition of a little rectified spirit. Scarcely unctuous to the touch; does not melt under 100°.

EMPLASTRA.

Arnica plaister may be prepared as follows:—

Take of Isinglass, in shreds - -	1 ounce;
Tincture of Arnica - -	6 fluid drachms;
Distilled Water - -	A sufficiency.

Dissolve the isinglass by first digesting and then boiling in a sufficient quantity of the water, filter through clean tow moistened with distilled water, and evaporate the solution on a water bath until its weight is reduced to 10 ounces. Spread about three fourths of this on silk or other suitable material, add the tincture of Arnica to the remainder, and complete the spreading.

Calendula plaister may also be prepared in the same manner.

GLYCEROLES.

Holding a place intermediate between ointments and liniments, are the glyceroles.

These consist of the medicine mixed with glycerine, and the proportions usually employed are the same as in the case of ointments. They form very convenient preparations, and, being soluble in all proportions in water and in alcohol, they can be diluted to form both liniments, lotions, and injections.

INJECTIONES.

These vary according to the uses to which they are to be applied.

1. Vaginal Injections.

A very convenient general formula for these is the following :—

Take of	The Medicine - - -	½ fluid ounce ;
	Glycerine - - -	1½ fluid ounce ;
	Distilled Water - -	2 fluid ounces.

Mix.

One teaspoonful of this with sufficient tepid water is used for each injection.

2. Urethral Injections.

With the exception of *Infusion of Hydrastis* (1 ounce to the pint), these have mostly consisted of solutions of various salts in distilled water of much the same strength as those used by the old school.

3. Rectal Injections.

When it is thought desirable to apply any medicine to the rectum, it is convenient to mix the quantity intended to be administered with about 2 fluid ounces of thin starch or arrowroot, and to inject it slowly, so that it may be retained.

LINIMENTA.

These are sometimes medicated oils, using olive oil as the basis. More frequently the following *Tincture of Soap* is used :—

Take of	Soft Soap - - - - -	6 ounces ;
	Proof Spirit - - -	24 fluid ounces.

Dissolve by means of a gentle heat, and strain.

Tinctures can be mixed with this in the proportion of 1 fluid drachm to 9 fluid drachms, and will form very convenient liniments or embrocations.

LOTIONES.

Lotions are prepared in the following ways :—

1. By simply diluting the medicine with distilled water in the proportion of 1 in 10 or 1 in 100 ; in the latter case 1½ fluid drachm to the pint is pretty nearly correct.

2. By diluting a glycerole of the medicine with 4 or 9 times its measure of distilled water.

3. By mixing the medicine, in the proportion of 1 in 100, with dilute alcohol, to make an evaporating lotion.

OLEUM AMYGDALÆ.

Almond Oil.

The oil expressed from bitter and sweet almonds.

Characters.—Pale yellow, nearly inodorous or having a nutty odour, with a bland oleaginous taste.

OLEUM OLIVÆ.

Olive Oil.

The oil expressed in the South of Europe from the ripe fruit of *Olea europœa,* Linn.; Steph. and Church., Med. Bot., pl. 15.

Characters.—Pale yellow, with scarcely any odour, and a bland oleaginous taste; congeals partially at about 36°.

OPODELDOCS.

Opodeldocs are semi-solid liniments; they are prepared as follows:—

Take of White Curd Soap	4½ ounces;
Rectified Spirit	15 fluid ounces;
Distilled Water	9 fluid ounces.

Digest the soap in the water at a gentle heat until it becomes transparent, then add very gradually the rectified spirit, agitating occasionally till complete solution is effected. While still fluid add the medicine (in the proportion of 1 fluid drachm of mother tincture to 9 fluid drachms of the opodeldoc), mix thoroughly, strain and pour into bottles.

Arnica and *Rhus* are the chief medicines used in this form.

SAPO ANIMALIS.

Curd Soap.

A soap made with soda and a purified animal fat consisting principally of Stearin.

Characters and Tests.—White, or with a very light greyish tint; dry, nearly inodorous; horny and pulverizable when kept in dry warm air. Easily moulded when heated, soluble in rectified spirit; soluble also in hot water, the solution being neutral or only slightly alkaline to test paper. It does not impart a greasy stain to paper.

SAPO DURUS.

Hard Soap.

Soap made with olive oil and soda.

Characters.—Greyish-white, dry, inodorous; horny and pulverizable when kept in dry warm air; easily moulded when heated. Soluble in rectified spirit; not imparting an oily stain to paper. Incinerated, it yields an ash which does not deliquesce.

SAPO MOLLIS.

Soft Soap.

Soap made with olive oil and potash.

Characters.—Yellowish-green, inodorous, of a gelatinous consistence. Soluble in rectified spirit; not imparting an oily stain to paper. Incinerated, it yields an ash which is very deliquescent.

UNGUENTA.

Ointments may be prepared in various ways, viz.:—

1. With Prepared Lard alone; this has the disadvantage of soon becoming rancid.

Unguentum Cetacei.

2. With Spermaceti Ointment, prepared as follows:—

Take of Spermaceti - - -	5 ounces;
White Wax - - -	2 ounces;
Almond Oil - -	1 pint, or a sufficiency.

Melt together with a gentle heat, remove the mixture, and stir constantly while it cools.

Ceratum Simplex.

3. Should a firm ointment or Cerate be required, the following proportions are preferable:—

Take of Spermaceti	3 ounces;
White wax	6 ounces:
Olive Oil	14 fluid ounces.

Melt the spermaceti and wax in the oil on a water-bath; remove the mixture, and when cool, but not set, gradually add the medicating tincture, stirring briskly till cold.

Unguentum Simplex.

4. A Simple Ointment may be prepared in the following manner:—

Take of White Wax	2 ounces;
Prepared Lard	3 ounces;
Almond Oil	3 fluid ounces.

Melt the wax and lard in the oil on a water-bath; then remove the mixture, and stir constantly while it cools.

Glycerinum Amyli.

5. A fifth and very suitable form of ointment has for its basis Glycerine of Starch, prepared as follows:—

Take of Starch	1 ounce;
Glycerine	8 fluid ounces.

Rub them together until they are intimately mixed, then transfer the mixture to a porcelain dish, and apply a heat gradually raised to 240°, stirring it constantly until the starch particles are completely broken and a translucent jelly is formed.

In the great majority of instances the proportion of 1 in 10 will be found satisfactory in medicating all these ointments, say 44 minims in the ounce, or, if it is desired to be very accurate, 1 drachm of the medicine to 9 drachms of the ointment.

APPENDIX.

UNDER this heading are included—

1. Partially proved medicines, some of them being already well spoken of as curative agents.

2. Medicines less known, but about whose physiological action or therapeutic value sufficient information has been obtained to entitle them to some brief notice.

It must be evident that this part of the work might have been largely extended, but the object being to secure only those medicines that promised to enrich our Materia Medica, a selection had to be made. In this way the names of many of those but little known are excluded, while others that may be said to be in a transition state are retained. Though some that were in the first edition of the Pharmacopœia are retained that perhaps might have been left out, it is hoped that none that should find a place are thus dealt with.

APPENDIX.

ABIES NIGRA.

Abies nigra, *Michx.* *Nat. ord.*, CONIFERÆ.
Synonym.—Pinus nigra.
Black or Double Spruce.
Habitat.—America.
Part employed.—The gum.
Preparation.—Tincture—proof spirit.

ACALYPHA.

Acalypha indica, *Linn.* *Nat. ord.*, EUPHORBIACEÆ.
Cupameni. Koopamanie.
Habitat.—An East Indian plant.
Parts employed.—The leaves.
Preparation.—Tincture—20 O.P. spirit.

ACIDUM ACETICUM.

Present name.—Glacial Acetic Acid, $HC_2H_3O_2$.

Concentrated Acetic Acid, corresponding to at least 84 per cent. by weight of anhydride, $C_4H_6O_3$.

Characters and Tests.—It crystallizes when cooled to 34°, and remains crystalline until the temperature rises to above 48°. Specific gravity 1·065 to 1·066, and this is increased by adding 10 per cent. of water. At the mean temperature of the air it is a colourless liquid, with a pungent acetous odour.

60 grains by weight mixed with a fluid ounce of distilled water require for neutralization at least 990 grain measures of the volumetric solution of Soda. It leaves no residue when evaporated, and gives no precipitate with Sulphuretted Hydrogen, Chloride of Barium, or Nitrate of Silver. If a fluid drachm of it, mixed with half an ounce of distilled water and half a drachm of pure Hydrochloric Acid, be put into a small flask with a few pieces of Granulated Zinc, and, while the effervescence continues, a slip of bibulous paper wetted with solution of Acetate of Lead be suspended in the upper part of the flask above the liquid for about five minutes, the paper will not become discoloured.

Preparation.—1 fluid drachm diluted to 10 fluid drachms with distilled water will make 1^x.

Distilled water is used for 1, distilled water to which 5 per cent. of rectified spirit has been added for 3^x to 3, dilute alcohol for 4, and rectified spirit for 5 and upwards.

It is used chiefly in the preparation of the acetates.

ACIDUM BORACICUM.

Present name.—Crystallized Boric Acid. $HBO_2.H_2O$.

Prepared by adding any of the mineral acids to a hot saturated solution of Borax. It is deposited in crystalline scales on cooling. These, after being washed with distilled water and dried, are fused in a platinum crucible, and the mass re-dissolved in four times its weight of boiling distilled water, and re-crystallized.

Characters and Tests.—Colourless scales which effloresce and lose moisture at a gentle heat, and at a red heat fuse to a transparent, viscid, ductile glass, which remains clear as it cools. Sparingly soluble in cold water, but freely soluble in boiling water and in alcohol. The aqueous solution has a bitterish and scarcely sour taste and a feeble action upon vegetable colours; the alcoholic solution burns with a green flame.

Preparation.—Solution in rectified spirit.

ACIDUM FORMICUM.

Glacial Formic Acid. $HCHO_2$.

An acid first discovered in the red ant (*Formica rufa*), but easily prepared artificially by various processes.

Characters and Tests.—A clear, colourless, fuming liquid of an irritating odour having a strong acid reaction. Specific gravity 1·23. It crystallizes in brilliant scales when cooled below 32° and boils at about 220° yielding an inflammable vapour which burns with a blue flame. Diluted with an equal bulk of water it yields no precipitate with Sulphuretted Hydrogen or Chloride of Barium. When Nitrate of Silver is boiled with it the metal is quickly reduced and a colourless gas evolved. When evaporated it leaves no residue.

N.B.—It is extremely corrosive and causes vesications or painful ulcers when dropped on the skin.

Preparation.—Solution in distilled water for 1^x, using dilute alcohol for 1, and rectified spirit for 3^x and upwards.

ACIDUM GALLICUM.

Present name.—Trioxybenzoic Acid. $H_3C_7H_3O_5.H_2O$.

Gallic Acid.

Prepared from galls, which are excrescences on *Quercus infectoria*, Olivier, caused by the punctures and deposited ova of *Diplolepis Gallæ tinctoriæ*, Latr.

Characters and Tests.—Crystalline, in acicular prisms or silky needles, sometimes nearly white, but generally of a pale fawn-colour. It requires about 100 parts of cold water for its solution, but dissolves in 3 parts of boiling water. Soluble also in rectified spirit. The aqueous solution gives no precipitate with solution of Gelatine. It gives a bluish-black precipitate with a Persalt of Iron. The crystalline acid when dried at 212° loses 9·5 per cent. of its weight. It leaves no residue when burned with free access of air.

Preparation.—Solution in rectified spirit.

ACIDUM LACTICUM.

Present name.—Lactic or Isolactic Acid. $HC_3H_5O_3$.

Fermentation Lactic Acid.

Prepared by the fermentation of milk, sugar and other substances, and purified by first neutralizing the acid with zinc-white, then crystallizing the resulting zinc lactate repeatedly, and finally decomposing its solution with Sulphuretted Hydrogen and separating the pure acid by agitating the concentrated aqueous solution with ether. It is then concentrated by evaporation in vacuo over oil of vitriol to a syrupy consistence.

It must answer the following

Characters and Tests.—A colourless, syrupy liquid, specific gravity 1·210 with an intensely sour taste and an acid reaction, readily soluble in water, alcohol and ether, forming clear solutions. Diluted with six times its volume of distilled water it is not precipitated by Chloride of Barium, Oxalate of Ammonia, or, when saturated with Ammonia, by Sulphuretted Hydrogen. When gently heated it yields no acetous or rancid odour.

Preparation.—Solution in distilled water for 1^x, using dilute alcohol for 1, and rectified spirit for all above.

ACIDUM SALICYLICUM.

Present name.—Ortho-oxybenzoic Acid. $HC_7H_5O_3$.

Salicylic Acid.

An acid found in the flowers of *Spiræa ulmaria*, Linn.; now prepared artificially from Carbolic Acid by a patent process. Purified by recrystallization.

Characters and Tests.—In colourless prisms or needles which are inodorous, of a warm sweet-astringent taste, melt at 312° to 316° and at a higher temperature give off Phenol. It requires about 1800 parts of cold water to dissolve it, but the solution acquires a deep violet colour on the addition of a minute quantity of solution of Perchloride of Iron. Readily soluble in rectified spirit.

Preparations.—Solution in rectified spirit for 1^x and upwards. Trituration.

ACIDUM SULPHUROSUM.

Present name.—Sulphurous Anhydride. SO_2.

Sulphurous acid gas, dissolved in water, and constituting 9·2 per cent. by weight of the solution.

Take of Sulphuric Acid - - -	4 fluid ounces;
Wood Charcoal, broken into small pieces - - -	1 ounce;
Water - - - - -	2 fluid ounces;
Distilled Water - - -	20 fluid ounces.

Put the charcoal and sulphuric acid into a glass flask, connected by a glass tube with a wash-bottle containing the 2 ounces of water, whence a second tube leads into a pint bottle containing the distilled water, to the bottom of which the gas-delivery tube should pass. Apply heat to the flask until gas is evolved, which is to be conducted through the water in the wash-bottle, and then into the distilled water, the latter being kept cold, and the process being continued until the bubbles of gas pass through the solution undiminished in size. The product should be kept in a stoppered bottle in a cool place.

Characters and Tests.—A colourless liquid with a pungent sulphurous odour. Specific gravity 1·04. It gives no precipitate, or but a very slight one, with Chloride of Barium, but a copious one if solution of Chlorine be also added. 34·7 grains by weight of it, mixed with an ounce of distilled water and a little mucilage of Starch, do not acquire a permanent blue colour with the volumetric solution of Iodine until 1,000 grain measures of the latter have been added. When evaporated it leaves no residue.

Preparation.—The above may be considered as the 1^x attenuation; dilute alcohol may be used for 1, and rectified spirit for all above.

ACIDUM TANNICUM.

Present name.—Gallo-tannin. $C_{27}H_{22}O_{17}$.

Tannic Acid or Tannin.

An amorphous substance extracted from galls (vide *Acidum Gallicum*).

Characters and Tests.—In pale yellow vesicular masses or thin glistening scales, with a strongly astringent taste, and an acid reaction; readily soluble in less than two parts of cold water, and in rectified spirit, very sparingly soluble in ether. The aqueous solution precipitates solution of Gelatine yellowish-white, and the Persalts of Iron of a bluish-black colour. It leaves no residue when burned with free access of air.

Preparation.—Solution in rectified spirit.

ACTÆA SPICATA.

Actæa spicata, *Linn.* *Nat. ord.*, RANUNCULACEÆ.

Herb Christopher, or Baneberry.

Parts employed.—1, the fresh root; 2, the ripe fruit.

Characters.—A perennial herb, with large radical *leaves*, not unlike those of several *Umbellifers*, the stalk usually twice divided into 3 or 5 pinnately arranged branches; segments or leaflets ovate, pointed, often 3-lobed, and coarsely toothed, of a deep green, and quite glabrous. *Stem* 1 to 2 feet high, with few smaller leaves. *Flowers* small, nearly white, in a short, loose, oblong terminal raceme. *Berries* small, nearly black.

Preparation.—Tincture—proof spirit in either case.

ÆSCULUS GLABRA.

Æsculus glabra, *Willd.* *Nat. ord.*, Sapindaceæ.

Fœtid or Ohio Buckeye.

A large tree found in Ohio and States of North America watered by the Ohio river.

Parts employed.—The whole ripe fruit.

Preparations.—Tincture—proof spirit. Trituration.

ALCOHOL SULPHURIS.

Synonym.—Carburetum Sulphuris.

Present name.—Carbonic Disulphide. CS_2.

Bisulphide of Carbon.

Prepared by passing the vapour of Sulphur over Charcoal heated to redness in a porcelain tube, and condensing the product in a properly cooled vessel. It is then purified by re-distillation over quicklime.

Characters.—A very volatile, colourless liquid, of high refracting power, of an acrid, pungent taste, and a fœtid, peculiar, sulphurous odour. It burns with a blue flame forming Sulphurous and Carbonic Acid gases, and when its vapour is mixed with oxygen it becomes explosive. Insoluble in water; soluble in all proportions in ether, and in alcohol. Its vapour is very poisonous, and great care should be taken to secure it in well-stoppered bottles.

Preparation.—Solution in rectified spirit.

ALSTONIA SCHOLARIS.

Alstonia scholaris, *R.Br.* *Nat. ord.*, Apocynaceæ.

Satween. Dita Bark.

A large East Indian tree.

Part employed.—The bark.

Preparation.—Tincture—proof spirit.

ALUMINIUM.

Metallic Aluminium. Al.

The purified metal in the form of the thinnest leaf.

Characters and Tests.—Very thin, brilliant, silvery white metallic leaf, not oxidized by the action of air, very light, and fusible at a bright red heat. Insoluble in Nitric Acid at ordinary temperatures and very slowly dissolved by the boiling acid. Readily soluble without residue in diluted Hydrochloric Acid and in boiling solution of Potash. The solution in diluted Hydrochloric Acid is not precipitated by Sulphuretted Hydrogen.

Preparation.—Trituration.

AMMONIUM ACETICUM.

Synonyms.—Spiritus Mindereri. Ammoniæ Acetatis Liquor.

Present name.—Ammonic Acetate. $NH_4C_2H_3O_2$.

Mindererus' Spirit.

Prepared by saturating diluted Acetic Acid with Carbonate of Ammonia.

Preparation.—Solution in distilled water.

AMMONIUM BENZOICUM.

Synonym.—Ammoniæ Benzoas.

Present name.—Ammonic Benzoate. $NH_4C_7H_5O_2$.

Prepared by dissolving Benzoic Acid in solution of Ammonia, and crystallizing.

Characters and Tests.—In colourless laminar crystals, soluble in water and in alcohol. It gives a bulky yellowish precipitate with Perchloride of Iron. Its aqueous solution when heated with Caustic Potash evolves Ammonia, and, if it be not too dilute, when acidulated with Hydrochloric Acid, it gives a deposit of Benzoic Acid. When heated it sublimes without any residue.

Preparation.—Solution in distilled water for 1^x, using dilute alcohol for 1, and rectified spirit for all above.

AMMONIUM BROMATUM.

Synonym.—Ammonii Bromidum.

Present name.—Ammonic Bromide. NH_4Br.

Prepared by the gradual addition of solution of Ammonia to Bromine and water till saturated, then adding bromine water in slight excess, passing sulphuretted hydrogen through the liquid, boiling, filtering, adding excess of ammonia and evaporating to dryness. It is then purified by re-crystallization.

Characters and Tests.—In colourless crystals, which become slightly yellow by exposure to the air, and have a pungent saline taste. May be sublimed unchanged by the application of heat. Readily soluble in water, less soluble in spirit. A solution of the salt in water, mixed with mucilage of Starch and a drop of an aqueous solution of Bromine of Chlorine, does not exhibit any blue colour.

Preparation —Solution in distilled water up to 1, using dilute alcohol for 3^x, and afterwards rectified spirit.

AMMONIUM CITRICUM.

Synonym.—Ammoniæ Citras.

Present name.—Ammonic Citrate. $(NH_4)_3C_6H_5O_7$.

Prepared by neutralizing Citric Acid with strong solution of Ammonia, and crystallizing.

Preparation.—Solution in distilled water up to 1, using distilled water to which 5 per cent. of rectified spirit has been added for 3^x, dilute alcohol for 2, and after that rectified spirit.

AMMONIUM PHOSPHORICUM.

Synonym.—Ammoniæ Phosphas.

Present name.—Hydro-diammonic Phosphate. $(NH_4)_2HPO_4$.

Prepared by neutralizing Phosphoric Acid with strong solution of Ammonia.

Characters and Tests.—In transparent colourless prisms, soluble in water, insoluble in rectified spirit. When heated with Caustic Potash, Ammonia is evolved. The aqueous solution gives a yellow precipitate with Nitrate of Silver. If 20 grains of this salt be dissolved in water and solution of Ammonio-sulphate of Magnesia added, a crystalline precipitate falls, which, when well washed upon a filter with solution of Ammonia diluted with five times its bulk of water, dried, and heated to redness, leaves 16·8 grains.

Preparation.—Solution in distilled water up to 1, using distilled water to which 5 per cent. of rectified spirit has been added for 3^x and 2, dilute alcohol for 3, and afterwards rectified spirit.

AMMONIUM SUCCINICUM.

Synonym.—Ammoniæ Succinas.

Present name.—Ammonic Succinate. $(NH_4)_2C_4H_4O_4$.

Prepared by neutralizing Succinic Acid with solution of Ammonia.

Characters and Tests.—Colourless crystals, entirely volatilized by heat, readily soluble in water. The solution yields a reddish-brown precipitate with Perchloride of Iron, and a white precipitate with a mixture of alcohol, Ammonia and Chloride of Barium, but remains clear on the addition of Hydrochloric Acid. When heated with caustic Potash, it evolves Ammonia.

Preparation.—Solution in distilled water up to 1, using distilled water to which 5 per cent. of rectified spirit has been added for 3^x and 2, dilute alcohol for 3, and afterwards rectified spirit.

AMYL NITROSUM.

Synonym.—Amyl Nitris.

Nitrite of Amyl. $C_5H_{11}NO_2$.

Prepared from amylic alcohol by the action of nitric or nitrous acid. Purified by redistillation.

Characters and Tests.—An ethereal liquid of a yellowish colour, and peculiar not disagreeable odour. Specific gravity 0·877. Boiling point 205°. Insoluble in water; soluble in rectified spirit in all proportions. If it be added drop by drop to Caustic Potash while fused by the application of heat, Valerianate of Potash will be formed.

Preparation.—Solution in rectified spirit.

N.B.—Care is necessary in the use of this powerful agent, as even smelling at the bottle may produce unpleasant sensations.

ANAGALLIS.

Anagallis arvensis, *Linn.* *Nat. ord.*, Primulaceæ.

Scarlet Pimpernel, Poor Man's Weather-glass.

Part employed.—The entire fresh herb.

Characters.—A neat, much branched, procumbent annual, 6 inches to near a foot long, with opposite, broadly ovate, sessile and entire *leaves.* Pedicels considerably longer than the leaves, and rolled back as the capsule ripens. *Calyx* divisions pointed. *Corolla* rotate, usually of a bright red within. Capsule opening transversely.

Preparation.—Tincture—proof spirit.

ANGUSTURA SPURIA.

Nat. ord., Loganiaceæ.

Synonym.—Brucea antidysenterica.

There has been great obscurity respecting the source of the poisonous false Angustura bark, which was the substance proved and published in Stapf's Archives, xiv.; so that the name is only retained provisionally until the true source of the bark is accurately determined. It was formerly supposed to be derived from *Brucea antidysenterica*, Mill., but is now very generally acknowledged to be the bark of *Strychnos Nux vomica*, Linn.

Characters and Tests.—Flat pieces, or incomplete quills, from 2 to 8 inches long, externally of a dirty greyish-yellow ground, with numerous irregular prominent spots or tubercles of a lighter grey colour. Distinguished from *Angustura vera* by the transverse fracture becoming bright red when touched with Nitric Acid. The rusty specks become deep bluish-green when touched with the same acid.

Preparation.—Tincture, using proof spirit.

ANILINUM.

Aniline, Phenylamine, Kyanol. $C_6H_5.NH_2$.

Obtained by the action of iron and acetic acid upon nitrobenzene. Purified by converting the product into oxalate, crystallizing several times from alcohol and decomposing it with potash, and finally distilling.

Characters and Tests.—A colourless oily liquid, having a faint peculiar odour. Specific gravity, 1·028. Boiling point, 364°. Solidifies at low temperatures and melts again at 18°. Sparingly soluble in water; freely soluble in alcohol and ether. When exposed to the air it turns brown and gradually resinizes. The aqueous solution when added to solution of Chlorinated Lime produces a purple violet colour.

Preparation.—Solution in rectified spirit. It should be kept in amber glass bottles.

ANILINUM SULPHURICUM.

Synonym.—Anilinæ Sulphas.

Sulphate of Aniline, Kyanol Sulphate, Phenylamine Sulphate. $(C_6H_7N)_2H_2SO_4$.

Prepared by neutralizing Sulphuric Acid with pure Aniline.

Characters and Tests.—Colourless crystalline masses. Sparingly soluble in alcohol, entirely and readily soluble in water. The aqueous solution gives a white precipitate with Chloride of Barium, and when added to solution of Chlorinated Lime, produces instantly an intense purple colour (mauve).

Preparation.—Solution in distilled water up to 1, using distilled water to which 5 per cent. of rectified spirit has been added for 3^x and 2, dilute alcohol for 3, and afterwards rectified spirit. It should be preserved in amber glass bottles.

ANISUM STELLATUM.

Illicium anisatum, *Linn.* *Nat. ord.*, MAGNOLIACEÆ.

Star Anise-seed.

Fig.—Bent. and Trim., Med. Pl., 10.

Habitat.—China.

Part employed.—The seed.

Characters.—*Fruit*, consisting of from 5 to 10 brownish ligneous capsules 4 or 5 lines long, united together in the form of a star, each containing a brown shining seed.

Preparation.—Tincture, using rectified spirit.

ANTHEMIS NOBILIS.

Anthemis nobilis, *Linn.* *Nat. ord.*, COMPOSITÆ.

Common Chamomile.

Fig.—Bent. and Trim., Med. Pl., 154.

Part employed.—The entire plant.

Characters.—A procumbent or creeping, branched perennial; the flowering branches shortly ascending and leafy. *Leaf segments* fine and pointed, few and compact. *Flower-heads* on terminal peduncles with white rays. Scales of the receptacle rather broad, obtuse, and nearly as long as the central florets.

Preparation.—Tincture—20 O.P. spirit.

ANTHOXANTHUM.

Anthoxanthum odoratum, *Linn.* *Nat. ord.*, Graminaceæ.

Sweet Vernal Grass.

Parts employed.—The flowering herb.

Characters.—A rather slender erect perennial, 1 to 2 feet high, and quite glabrous. Spike-like *panicle* 1½ to 2 inches long; outer glumes very pointed, the second about 3 lines long, the first seldom above half that length. Inner glumes usually quite included in them, or rarely the longest awn slightly protrudes. It yields a sweet odour of new-mown hay when dried.

Preparation.—Tincture—20 O.P. spirit.

Average loss of moisture, 59 per cent.

ANTIMONIUM MURIATICUM.

Synonym.—Antimonii chloridum.

Present name.—Impure Antimonius Chloride. $SbCl_3$.

Butter of Antimony.

Trichloride of Antimony containing a variable quantity of the trioxide, the presence of which is due to exposure to the air.

Obtained by distilling the residue left on dissolving antimonious sulphide in hydrochloric acid for the generation of sulphuretted hydrogen.

Characters and Tests.—A volatile, fusible, crystalline compound, deliquescent and powerfully corrosive, of a yellowish colour. Soluble in Hydrochloric Acid, forming a solution which dropped into water gives a white precipitate, and the filtered solution lets fall a copious deposit on the addition of

Nitrate of Silver. If the white precipitate formed by water be treated with Sulphuretted Hydrogen it becomes orange-coloured.

Preparation.—Trituration.

ANTIMONIUM OXYDATUM.

Synonym.—Antimonii oxidum.

Present name.—Antimonious Oxide. Sb_2O_3.

Oxide of Antimony.

Take of Solution of Chloride of Antimony of the British Pharmacopœia	16 fluid ounces;
Carbonate of Soda	6 ounces;
Water	2 gallons;
Distilled Water	a sufficiency.

Pour the antimonial solution into the water, mix thoroughly, let the precipitate settle, remove the supernatant liquid by a siphon, add one gallon of distilled water, agitate well, let the precipitate subside, again withdraw the fluid and repeat the processes of affusion of distilled water, agitation and subsidence. Add now the carbonate of soda previously dissolved in two pints of distilled water, leave them in contact for half an hour, stirring frequently, collect the deposit on a calico filter, and wash with boiling distilled water until the washings cease to give a precipitate with a solution of nitrate of silver acidulated by nitric acid. Lastly, dry the product at a heat not exceeding 212°.

Characters and Tests.—A greyish-white powder, fusible at a low red heat, insoluble in water, but readily dissolved by Hydrochloric Acid. The solution, dropped into distilled water, gives a white deposit, at once changed to orange by Sulphuretted Hydrogen. It dissolves entirely when boiled with an excess of the acid Tartrate of Potash.

Preparation.—Trituration.

Used chiefly in the preparation of *Antimonium Tartaricum.*

ANTIMONIUM SULPHURATUM AUREUM.

Synonym.—Antimonii Oxysulphuretum.

This consists of Antimonium Crudum, Sb_2S_3, mixed with a variable quantity of Oxide of Antimony, Sb_2O_3.

Prepared by boiling black Sulphide of Antimony with solution of Soda and precipitating the solution before it cools by the addition of diluted sulphuric acid in slight excess.

Characters and Tests.—An orange red powder, readily dissolved by caustic Soda, also by Hydrochloric Acid with the evolution of Sulphuretted Hydrogen and the separation of a little sulphur. Boiled in water with acid Tartrate of Potash, the resulting solution is precipitated orange red with Sulphuretted Hydrogen. 60 grains of this preparation, dissolved in Hydrochloric Acid and dropped into water, give a white precipitate, which, when washed and dried, weighs about 53 grains.

Preparation.—Trituration.

APOCYNUM ANDROSÆMIFOLIUM.

Apocynum androsæmifolium, *Linn. Nat. ord.*, APOCYNACEÆ.

American Dog's-bane. Bitter Root.

Part employed.—The root.

Preparation.—Tincture—proof spirit.

APOMORPHINUM.

Contraction.—Apm.

Synonym.—Apomorphiæ Hydrochloras.

Present name.—Apomorphia Hydrochloride. $C_{17}H_{17}NO_2.HCl$.

Prepared from Morphia by heating it with considerable excess of Hydrochloric Acid in a thick sealed tube to nearly 300° F. for two or three hours. The product is then diluted with distilled water, precipitated with Bi-carbonate of Soda and the precipitate treated with ether or chloroform. On agitating a minute quantity of Hydrochloric Acid with the last solution, crystals of the Hydrochloride are formed on the sides of the vessel. These are first drained, then washed with a little cold water and re-crystallized from solution in hot water, and finally dried on filtering-paper.

Characters and Tests.—In small crystals. It gives with Perchloride of Iron a dark purple-amethyst colouration, with Nitric Acid a brucia red, and with Bichromate of Potash and Sulphuric Acid a strychnia red.

Preparation.—Trituration.

ARALIA RACEMOSA.

Aralia racemosa, *Linn.* *Nat. ord.*, ARALIACEÆ.

American Spikenard.

A shrubby plant, an account of which is given in Hale's New Remedies.

Part employed.—The fresh root.

Preparation.—Tincture.

ARANEA DIADEMA.

Class, ARACHNIDA; *Order*, ARANEIDEA; *Family*, EPEIRIDÆ.

Synonym.—Epeira Diadema.

Garden or Papal Cross Spider. German, *Kreutz Spinne;* French, *Araignée à croix papale.*

This spider is found all over Europe and America, in stables, on old walls, &c.

Parts employed.—The entire animal.

Characters.—Body ovoid, often as large as a small nut; a longitudinal line on the back, composed of yellow and white points, and traversed by 3 other similar lines.

Preparations.—Tincture, using one live spider to every 100 minims of proof spirit, and macerating for ten or twelve days. Trituration.

ARANEA SCINENCIA.

Class, ARACHNIDA; *Order*, ARANEIDEA; *Family* (?)

This Spider, of which no description is given, was proved by Dr. Rowley, Louisville, Ky., and the provings were published in North Amer. Journ. of Hom., vol. vii., p. 65.

It is described in Allen's Encyclopædia as "a grey spider found in Kentucky on old walls; does not spin a web."

Parts employed.—The whole animal.

Preparations.—Tincture, using proof spirit. Trituration.

ARCTIUM LAPPA.

Arctium Lappa, *Linn.* *Nat. ord.*, COMPOSITÆ.

Synonym.—Lappa major.

Fig.—Eng. Bot., 1228.

Common Burdock.

Part employed.—The root.

Characters.—A stout, branching, erect biennial, 3 to 5 feet high. Lower *leaves* heart-shaped, very large, sometimes attaining 1½ foot in length by a foot in breadth; the upper ones much smaller and broadly ovate. *Flower-heads* in terminal panicles. Involucres nearly globular, catching at anything they come in contact with by the hooked points of their numerous bracts. Florets purple, all equal. *Root* long, cylindrical.

Preparation.—Tincture—proof spirit.

Average loss of moisture, 74 per cent.

ARGENTUM CYANATUM.

Synonym.—Argenti Cyanidum.

Present name.—Argentic Cyanide. AgCN.

Prepared by precipitation from a solution of Nitrate of Silver by Cyanide of Potassium, and washing the precipitate with the same precautions as those named under *Argentum Muriaticum*.

Characters and Tests.—A white powder, insoluble in water, almost insoluble in boiling diluted Nitric Acid, but entirely soluble in strong boiling Nitric Acid and in solution of Ammonia. When gently heated it melts, and at a high temperature completely decomposes, giving off Cyanogen and leaving a residue of metallic Silver.

Preparation.—Trituration, which must be kept in amber glass bottles.

ARGENTUM IODATUM.

Synonym.—Argenti Iodidum.

Present name.—Argentic Iodide. AgI.

Prepared by precipitation from a solution of Nitrate of Silver by Iodide of Potassium. In washing and drying the precipitate the same precautions must be taken as in the case of *Argentum Muriaticum*.

Characters and Tests.—A pale yellow powder which is but slowly acted on by light, is insoluble in water and in diluted

Nitric Acid; almost insoluble in Ammonia, but readily dissolved by Cyanide of Potassium. It fuses easily into a reddish fluid which solidifies to a yellow and opaque mass on cooling.

Preparation.—Trituration, which must be kept in amber glass bottles.

ARGENTUM MURIATICUM.

Synonym.—Argenti Chloridum.

Present name.—Argentic Chloride. $AgCl$.

Prepared by precipitation from a solution of Nitrate of Silver with Hydrochloric Acid, washing carefully and drying, both of which latter processes must be conducted in yellow light.

Characters and Tests.—A white powder which quickly assumes a violet colour when moistened and exposed to direct sunlight; insoluble in water and in Nitric Acid, sparingly soluble in Hydrochloric Acid, freely soluble without residue in solution of Ammonia. When heated to 500° it melts, and on cooling forms a horny, semitransparent, sectile mass.

Preparation.—Trituration, which should be kept in amber glass bottles.

ARGENTUM OXYDATUM.

Synonym.—Argenti Oxidum.

Present name.—Argentic Oxide. Ag_2O.

Prepared by precipitating a solution of Nitrate of Silver with Lime-water, washing the precipitate carefully, and drying over a water-bath.

Characters and Tests.—An olive-brown powder, which at a low red heat gives off oxygen, and is reduced to the metallic state. It dissolves completely in Nitric Acid without the evolution of any gas, forming a solution which has the characters of Nitrate of Silver. 29 grains heated to redness leave 27 grains of metallic silver.

Preparation.—Trituration, which must be kept in amber glass bottles.

ARGENTUM PHOSPHORICUM.

Synonym.—Argenti Phosphas.

Present name.—Tri-argentic Phosphate. Ag_3PO_4.

Prepared by precipitation from a solution of Nitrate of Silver by Rhombic Phosphate of Soda, and washing the precipitate with all the precautions already mentioned under *Argentum Muriaticum.*

Characters and Tests.—A pale yellow powder, the colour of which is speedily changed by the action of light; insoluble in water, readily soluble in Nitric Acid and in Ammonia. When ignited it acquires a reddish-brown colour, and at an intense red heat it fuses without decomposition. 10 grains dissolved in 2 fluid drachms of distilled water acidulated with Nitric Acid give with Hydrochloric Acid a precipitate, which when washed and thoroughly dried, weighs 10·27 grains.

Preparation.—Trituration, which must be kept in amber glass bottles.

ARISTOLOCHIA MILHOMENS.

Aristolochia cymbifera, *Mart.* *Nat. ord.*, Aristolochiaceæ.

Synonym.—A. grandiflora.

Brazilian Snake Root.

Parts employed.—The flowers.

Preparation.—Tincture—proof spirit.

ARISTOLOCHIA SERPENTARIA.

Aristolochia Serpentaria, *Linn.* *Nat. ord.*, Aristolochiaceæ.

Synonym.—Serpentaria Virginiana.

Fig.—Bent. and Trim., Med. Pl., 246.

Virginia Snake Root.

Part employed.—The rhizome.

Characters.—A small roundish rhizome, with a tuft of numerous slender rootlets, about 3 inches long, yellowish, of an agreeable camphoraceous odour, and a warm bitter camphoraceous taste.

Preparation.—Tincture—proof spirit.

ARMORACIA, *vide* COCHLEARIA ARMORACIA.

ARSENICUM CITRINUM.

Synonym.—Arsenicum Sulphuratum Flavum.

Present name.—Arsenious Sesqui-sulphide. As_2S_3.

Orpiment.

A native sesqui-sulphide of Arsenic. It may be prepared artificially by passing Sulphuretted Hydrogen through a solution of Arsenious Anhydride in dilute Hydrochloric Acid, and washing the precipitate thoroughly.

Characters and Tests.—A bright golden-yellow powder, insoluble in Hydrochloric Acid, but soluble in Carbonate of Ammonia and in Sulphide of Ammonium. Soluble also in boiling diluted Nitric Acid, with separation of Sulphur. Heated in a test tube it assumes a brownish red colour, fuses, and finally sublimes without leaving any residue.

Preparation.—Trituration.

ARSENICUM HYDROGENOSUM.

Present names.—Arsenious Trihydride. Arseniuretted Hydrogen. Arsine. AsH_3.

Prepared by fusing Metallic Arsenic with its own weight of granulated Zinc, and decomposing the alloy with strong Hydrochloric Acid.

Characters.—A very poisonous colourless gas, with a strong Garlic smell, burning with a blue flame if ignited, depositing Metallic Arsenic on the sides of a cool tube held in the flame.

Preparation.—Solution in water, which absorbs about one-fifth of its volume.

N.B.—The greatest care is required to avoid the inhalation of the smallest portion of this deadly gas.

ARSENICUM IODATUM.

Synonym.—Arsenici Iodidum.

Present name.—Arsenious Iodide. AsI_3.

Prepared by subliming a mixture of 1 part of Metallic Arsenic with 5 parts of Iodine in a flask or retort by the aid of a gentle heat.

Characters and Tests.—Brick-red crystalline flakes, soluble in alcohol and in water, sparingly soluble in Hydrochloric Acid, giving off violet fumes when boiled with Nitric Acid diluted with an equal bulk of water. The aqueous solution strongly acidulated with Hydrochloric Acid, gives with Sulphuretted Hydrogen, a yellow precipitate soluble in Carbonate of Ammonia. Entirely volatilised by heat.

Preparation.—Trituration.

ARSENICUM METALLICUM.

Metallic Arsenic. As.

Prepared by mixing Arsenious Anhydride with charcoal and decomposing it at a dull red heat; the Metallic Arsenic passes off in vapour and is deposited in crystals on the cool part of the apparatus employed, which, when a small quantity only is required, may conveniently consist of a glass tube.

Characters and Tests.—A very brittle steel-grey metal, of brilliant lustre, quickly tarnishing on exposure to moist air, crystallizing when sublimed in rhombic octohedrons. It has a specific gravity of about 5·9, and when heated to 356° in a closed vessel it volatilizes without fusing, leaving no residue. The odour of its vapour is powerful, and strongly resembles that of Garlic. In a closed vessel it may be sublimed again and again without change.

Preparation.—Trituration.

ARSENICUM RUBRUM.

Synonym.—Arsenicum Sulphuratum Rubrum.

Present name.—Arsenious Sulphide. As_2S_2.

Realgar.

A native mineral of an orange-red colour answering to the same tests as Orpiment *(Arsenicum Citrinum).*

Preparation.—Trituration.

ARTEMISIA ABROTANUM.

Artemisia Abrotanum, *Linn.* *Nat. ord.*, COMPOSITÆ.

Synonym.—Abrotanum mas.

Southernwood. Old Man.

Parts employed.—The leaves and stems.

Preparation.—Tincture.

ARTEMISIA ABSINTHIUM.

Artemisia Absinthium, *Linn.* *Nat. ord.*, COMPOSITÆ.

Synonym.—Absinthium vulgare.

Fig.—Bent. and Trim., Med. Pl., 156.

Common Wormwood.

Parts employed.—The fresh young leaves and flowers.

Characters.—*Stock* short, but branched and leafy, sometimes almost woody. *Stems* erect and hard but annual, 1 to 2 feet high; the whole plant greyish white, with a very close almost silky down. *Leaves* nearly orbicular in outline but much cut into oblong, linear, obtuse lobes. *Flower-heads* numerous, drooping, nearly hemispherical; outer bracts narrow-linear, inner ones very broad. Central florets numerous and mostly fertile; outer female ones small and often barren.

Preparation.—Tincture—20 O.P. spirit.

ARTEMISIA VULGARIS.

Artemisia vulgaris, *Linn.* *Nat. ord.*, COMPOSITÆ.

Fig.—Eng. Bot., 978.

Mugwort.

Part employed.—The root.

Characters.—*Stock* thick and woody, but short, with erect flowering *stems* 2 or 3 feet high. *Leaves* once or twice deeply pinnatifid, with lanceolate, pointed lobes or segments, coarsely toothed or lobed, green and glabrous above, very white underneath. *Flower-heads* ovoid, with cottony involucres, forming a long terminal panicle, each head containing from 12 to 20 complete florets, and a few female ones, all fertile.

Preparation.—Tincture—20 O.P. spirit.

ARUM TRIPHYLLUM.

Arum triphyllum, *Linn.* *Nat. ord.*, ARACEÆ.

Synonym.—Arisæma atrorubens *(Blume)*.

Indian Turnip. Dragon Root.

An American plant very similar to *Arum maculatum*.

Part employed.—The fresh tuber or corm.

Preparations.—Tincture. A rapid trituration of the expressed juice of the freshly-gathered root with 10 parts of sugar of milk has been recommended, and to be preserved in hermetically-sealed bottles, guarded from light and heat. The active principle is very volatile.

ASCLEPIAS SYRIACA.

Asclepias Cornuti, *D.C.* *Nat. ord.*, Asclepiadaceæ.

Silk-weed.

A North American plant.

Part employed.—The root.

Preparations.—Tincture of the fresh root. Trituration of the dried root.

ASCLEPIAS TUBEROSA.

Asclepias tuberosa, *Linn.* *Nat. ord.*, Asclepiadaceæ.

Pleurisy-root. Butterfly-weed.

This plant is indigenous to the United States; most abundant in the southern States.

Part employed.—The root.

Characters.—From the large, irregularly tuberous, branched, and fleshy perennial *root* arise numerous erect or procumbent hairy *stems*, about 3 feet in height. The very handsome, reddish-orange-coloured *flowers* are disposed in terminal or lateral corymbose umbels. The fresh root has a subacrid, nauseous taste; the dried root is bitter.

Preparations.—Tincture. Trituration.

ASPARAGUS.

Asparagus officinalis, *Linn.* *Nat. ord.*, Liliaceæ.

Asparagus.

Part employed.—The young shoots, as used for food.

Preparation.—Tincture—dilute alcohol.

Average loss of moisture, 80 per cent.

ASTACUS FLUVIATILIS, *vide* CANCER ASTACUS.

ASTERIAS RUBENS.

Class, Echinodermata; *Sub-class*, Hypostomata; *Order*, Asteroidea; *Family*, Asteriadæ; *Genus*, Uraster.

Synonym.—Uraster rubens.

Common Star-fish.

Parts employed.—The entire living animal.

Preparation.—Tincture, prepared as follows:—Wash the animals in distilled water, dry them with a cloth, weigh them and cut them in pieces; bruise to a pulp and add to each ounce by weight, four fluid ounces of rectified spirit; triturate the mass with the spirit and then transfer it to a wide-mouthed bottle and macerate for eight days, shaking the bottle twice daily. Finally filter.

ATHAMANTA.

Peucedanum Oreoselinum, *Cusson.* *Nat. ord.*, Umbelliferæ.

Synonyms.—Athamanta O. *(Linn.).* Herba Oreoselini.

German, *Grundheil.*

Habitat.—Central Europe.

Part employed.—The fresh herb.

Time for collecting.—Before flowering.

Preparation.—Tincture.

AURUM MURIATICUM NATRONATUM.

Synonym.—Auri et Natri Chloridum.

Present name.—Sodium Chloro-aurate. $NaCl.AuCl_3.2H_2O$.

Prepared by mixing solutions of the Chlorides of Gold and Sodium, and crystallizing.

Characters and Tests.—Golden yellow prismatic crystals, stable in the air, freely soluble in water and forming a solution which is precipitated brownish-white by Nitrate of Silver, deep brownish purple by Chloride of Tin, and brown by Sulphate of Iron. The precipitate produced by Sulphate of Iron when dried and pressed with the blade of a knife exhibits a metallic lustre.

Preparation.—Solution in distilled water for 1^x and 1, using dilute alcohol for 3^x and 2, and rectified spirit for all above 2.

BADIAGA.

An organic substance found under fresh water in Russia; stated by some to be a *siliceous sponge*, by others to be a *Conferva.*

Preparations.—Trituration of the dried substance. Tincture.

BALSAMUM PERUVIANUM.

Myroxylon Pereiræ, *Klotzsch.* *Nat. ord.*, LEGUMINOSÆ.

Synonym.—Myrospermum peruiferum.

Balsam of Peru.

This balsam, which exudes from the trunk of the tree after the bark has been scorched and removed, comes from Salvador in Central America.

Characters and Tests.—A reddish-brown or nearly black liquid, translucent in thin films; having the consistence of syrup, a balsamic odour, and an acrid, slightly bitter taste; soluble in 5 parts of rectified spirit. Undergoes no diminution in volume when mixed with water.

Preparation.—Solution in rectified spirit for 1^x and upwards.

BARYTA IODATA.

Synonym.—Barii Iodidum.

Present name.—Baric Iodide. BaI_2.

Prepared by adding Carbonate of Barium in suitable proportions to a boiling solution of Iodide of Iron, filtering the product and evaporating the filtrate to dryness in vacuo.

Characters and Tests.—In colourless granules, deliquescent and freely soluble in water. Its aqueous solution gives a copious white precipitate with diluted Sulphuric Acid, which is insoluble in Nitric Acid, Iodine being at the same time liberated. When the same solution is mixed with Mucilage of Starch, it yields a blue colour on the addition of a minute quantity of solution of Chlorine.

Preparation.—Solution in distilled water for 1^x, using dilute alcohol for 1 and 3^x, and rectified spirit for 2 and upwards.

BELLIS PERENNIS.

Bellis perennis, *Linn.* *Nat. Ord.*, COMPOSITÆ.

The Daisy.

Parts employed.—The whole plant.

Characters.—*Rootstock* perennial, tufted. *Leaves* radical, obovate or oblong, slightly toothed. *Peduncles* also radical, leafless, bearing single flower-heads. *Involucres* green, nearly glabrous. *Florets* of the ray ligulate, white or tinged with pink; those of the disc numerous, small, and tubular.

Preparation.—Tincture—proof spirit.

Average loss of moisture, 77 per cent.

BETONIA AQUATICA *vide* SCROPHULARIA AQUATICA.

BISMUTHUM OXYDATUM.

Synonym.—Bismuthi Oxidum.

Present name.—Bismuthous Oxide. Bi_2O_3.

Sesqui-oxide of Bismuth.

Prepared by boiling Subnitrate of Bismuth with solution of Soda.

Characters and Tests.—A dull lemon-yellow powder. Heated to incipient redness, it is not diminished in weight. It is insoluble in water, but soluble in Nitric Acid mixed with half its volume of water, and if it be thus dissolved to saturation, the solution mixed with ten or twenty times its volume of water yields a white precipitate. The Nitric Acid solution gives no precipitate with diluted Sulphuric Acid, nor with solution of Nitrate of Silver dropped into it. Solution of Chloride of Ammonium added to the Nitric Acid solution gives a white precipitate, and if this be treated with excess of solution of Ammonia, then filtered, and the clear filtrate neutralized with Hydrochloric Acid, it will not become turbid.

Preparation.—Trituration.

BUFO VULGARIS.

Rana Bufo, *Linn.* *Class*, REPTILIA; *Section*, SQUAMATA: *Order*, BATRACHIA; *Sub-order*, SALIENTIA; *Family*, BUFONIDÆ.

The common Toad.

Part employed.—The secretion from the cutaneous glands, obtained by irritating the animal.

Characters.—Upper surface covered with many brown tubercles; general colour brownish or blackish grey with an olive tinge; yellowish white beneath, tinged with grey; skin of back thickly studded with little glands, with two sets of larger glands, placed one on each side of the back of the head, which when pressed secrete an acrid liquid which is sometimes ejected to a distance of several inches. No teeth in jaws. Ear perfectly developed. Crown of head nearly flat, muzzle round or blunt, skin smooth on sides.

Preparation.—Tincture—proof spirit.

CADMIUM SULPHURATUM.

Present name.—Cadmic Sulphide. CdS.

Obtained by passing sulphuretted hydrogen gas through a solution of the sulphate.

Characters and Tests.—Bright yellow microscopic crystals, fusible only at a high temperature, insoluble in water, cold dilute acids, Ammonia, or in Sulphide of Ammonium; soluble in boiling diluted Sulphuric Acid.

Preparation.—Trituration.

CADMIUM SULPHURICUM.

Synonym.—Cadmii Sulphas.

Present name.—Cadmic Sulphate. $CdSO_4.4H_2O$.

Characters and Tests.—In colourless transparent crystals, with a strong metallic styptic taste. Freely soluble in water, but only slightly so in rectified spirit. The aqueous solution gives a white precipitate with Chloride of Barium; it also yields a yellow precipitate with Sulphuretted Hydrogen or Sulphide of Ammonium, which is insoluble in excess of the latter. The same solution also gives a white gelatinous precipitate with excess of solution of Potash, the filtrate from which is unaffected by Sulphide of Ammonium.

Preparation.—Solution in distilled water for 1^x and 1, using dilute alcohol for 3^x, and rectified spirit for 2 and upwards.

CAINCA.

Nat. ord., RUBIACEÆ.

An undetermined species of Chiococca (*D. C.*), brought originally from Brazil.

Characters.—Cylindrical pieces, varying in size from the thickness of a straw to that of the little finger, somewhat bent or contorted, slightly wrinkled longitudinally, with occasional small asperities; internally ligneous; externally covered with a thin, brittle, reddish-brown bark, having a light brown or brownish ash-coloured epidermis. The cortical portion has a resinous character, and a bitter disagreeable taste, somewhat acrid and astringent; the ligneous part is quite tasteless.

Part employed.—The root.

Preparation.—Tincture—proof spirit.

CAJUPUTUM.

Melaleuca minor, *D.C.* *Nat. ord.*, Myrtaceæ.

Synonyms.—Melaleuca Cajuputi, Oleum Cajuputi.

Fig.—Bent. and Trim., Med. Pl., 108.

Oil of Cajuput.

Part employed.—The volatile oil distilled from the leaves; imported from Batavia and Singapore.

Characters.—Very mobile, transparent, of a fine pale bluish-green colour. It has a strong agreeable odour, and a warm aromatic taste, and leaves a sensation of coldness in the mouth. Very volatile and inflammable, burning without leaving any residue.

Preparation.—Solution in rectified spirit.

CALCAREA ARSENICA.

Synonym.—Calcii Arsenias.

Present name.—Tricalcic Diarsenate. $Ca_3 2AsO_4$.

Characters and Tests.—A light, white amorphous powder, insoluble in water, but readily soluble in diluted Nitric Acid, forming a clear solution which gives a white precipitate on the addition of Oxalate of Ammonia. The powder, when treated with solution of Nitrate of Silver, immediately becomes brick-red.

Preparation.—Trituration.

CALCAREA CHLORATA.

Synonyms.—Calx Chlorata. Calx Chlorinata. Calcarea Hypochlorosa.

Chlorinated Lime, Bleaching Powder. $CaOCl_2$.

Characters and Tests.—A dull white powder with a feeble odour of Chlorine, partially soluble in water. The solution evolves Chlorine copiously upon the addition of Oxalic Acid, and deposits at the same time Oxalate of Lime. Ten grains mixed with thirty grains of Iodide of Potassium, and dissolved in four fluid ounces of water, produce, when acidulated with two fluid drachms of Hydrochloric Acid, a reddish solution, which requires for the discharge of its colour at least 850 grain-measures of the volumetric solution of Hyposulphite of Soda, corresponding to 30 per cent. of Chlorine liberated by Hydrochloric Acid.

Preparation.—Solution in distilled water, made by macerating 1 part of the powder in 10 of the water for 3 or 4 hours with occasional shaking. This constitutes the 1^x attenuation which should be kept in a stoppered bottle. Distilled water to which 5 per cent. of rectified spirit has been added is used for 1, dilute alcohol for 3^x, and rectified spirit for all above.

CALCAREA FLUORATA.

Synonym.—Calcii Fluoridum.

Present name.—Calcic or Calcium Fluoride. CaF_2.

Fluor Spar.

A trituration of this well-known mineral has been used.

CALCAREA HYPOPHOSPHOROSA.

Synonym.—Calcii Hypophosphis.

Present name.—Calcic or Calcium Hypophosphite. $Ca2PH_2O_2$.

Hypophosphite of Lime.

Prepared by heating Phosphorus with slaked Lime and water until phosphuretted hydrogen gas ceases to be evolved, then filtering the liquid, separating uncombined lime with carbonic acid gas, and evaporating the remaining solution until the salt separates in a crystalline condition.

Characters and Tests.—A white crystalline salt, with a pearly lustre, and a bitter nauseous taste. Insoluble in rectified spirit. Soluble in 6 parts of cold water, and only slightly more soluble in hot water. The crystals do not lose water when heated to 300°. Heated to redness, they ignite, evolving spontaneously inflammable phosphuretted hydrogen, and leaving a reddish-coloured residue amounting to about 80 per cent. of the salt.

Preparations.—Trituration. Solution in distilled water for 1^x, using distilled water to which 5 per cent. of rectified spirit has been added for 1, dilute alcohol for 3^x, and rectified spirit for all above.

CALCAREA IODATA.

Synonym.—Calcii Iodidum.

Present name.—Calcic Iodide. CaI_2.

Prepared by adding Milk of Lime (slaked lime diffused through water) in suitable proportions to a boiling solution of Iodide of Iron, filtering the product and evaporating to dryness in vacuo.

Characters and Tests.—Greyish-white crystalline masses, deliquescent and freely soluble in water. The solution gives a white precipitate with Oxalate of Ammonia, and when mixed with mucilage of Starch it yields a blue colour on the addition of a minute quantity of solution of Chlorine.

Preparation.—Solution in distilled water for 1^x, using dilute alcohol for 1, and rectified spirit for all above.

CALCAREA MURIATICA.

Synonym.—Calcii Chloridum.

Present name.—Calcic or Calcium Chloride. $CaCl_2$.

Prepared by neutralizing Hydrochloric Acid with pure white Carrara marble, filtering, and evaporating to dryness. Owing to its strong attraction for water, it must be preserved in well-stoppered bottles.

Characters and Tests.—In white agglutinated masses, dry, but very deliquescent; evolves no Chlorine or Hypochlorous Acid on the addition of Hydrochloric Acid, and is entirely soluble in twice its weight of water, also in alcohol. The aqueous solution is not precipitated by the addition of Lime-water.

Preparation.—Solution in distilled water for 1^x, using dilute alcohol for 1, and after that rectified spirit.

CALCAREA SULPHURICA.

Present name.—Calcic or Calcium Sulphate. $CaSO_4.2H_2O$.

Gypsum. Sulphate of Lime.

The commercial salt washed with distilled water and dried on a water bath.

Characters and Tests.—A bulky, white, crystalline powder, sparingly soluble in water, insoluble in alcohol, but dissolved to some extent by diluted Nitric and Hydrochloric Acids. When heated it loses moisture, and if the heat be raised to bright redness it fuses, and may be obtained in anhydrous crystals. Its aqueous solution gives an immediate white precipitate with Chloride of Barium, insoluble in Nitric Acid, and a white precipitate with Oxalate of Ammonia. Its solution in diluted Hydrochloric Acid is not discoloured by Sulphuretted Hydrogen.

Preparation.—Trituration.

CALOTROPIS GIGANTEA.

Calotropis Madarii, *Casanova.* *Nat. ord.*, ASCLEPIADACEÆ.

Madar or Mudar.

An East Indian Plant.

Part employed.—The bark.

Preparations.—Tincture—proof spirit. Trituration.

CAMPHORA MONOBROMATA.

Present name.—Monobromocamphor. $C_{10}H_{15}BrO$.

Characters and Tests.—Thin, colourless crystals, or long flat prisms, which melt at 169°, perfectly transparent and hard, having a camphoraceous odour combined with that of Bromine, and a persistent camphoraceous and terebinthinaceous taste; sparingly soluble in cold water, more so in hot, but readily soluble in alcohol and in ether. When boiled with water it sublimes slowly, condensing on the sides of the tube.

Preparation.—Trituration.

CANCER ASTACUS.

Class, CRUSTACEA; *Sub-class*, PODOPHTHALMATA; *Order*, DECAPODA; *Tribe*, OXYSTOMATA; *Sub-order*, MACROURA; *Family*, ASTACIDÆ; *Genus*, ASTACUS; *Species*, FLUVIATILIS.

Synonyms.—Astacus fluviatilis, (*Fabr.*), Cancer fluviatilis.

Common Craw-fish.

Parts employed.—The live crustacean.

Preparation.—Tincture prepared as follows :—

Wash the animals in distilled water, dry them with a cloth, weigh them, bruise to a pulp, and add to each ounce by weight, four fluid ounces of rectified spirit ; triturate the mass with the spirit and then transfer it to a wide-mouthed bottle and macerate for eight days shaking the bottle twice daily. Finally filter.

CARBO.

Synonym.—Carboneum

Lamp-black.

The product obtained from burning coal oil in a lamp.

Preparation.— Trituration.

CARDUUS BENEDICTUS.

Carduus benedictus, *Cam.* *Nat. ord.*, Compositæ.

Synonyms.—Cnicus benedictus, *(Linn.)*, Centaurea benedicta.

The Blessed Thistle.

Habitat.—Southern Europe. Cultivated in gardens.

Parts employed.—The leaves.

Characters.—*Stem* about 2 feet high, branching towards the top. *Leaves* elliptical, rough, irregularly toothed, barbed with sharp points at their edges, of a bright green colour on their upper surface, and whitish underneath ; lower leaves on footstalks, deeply sinuate ; upper leaves sessile and in some measure decurrent. *Flowers* yellow, surrounded by an involucre of 10 bracts, of which the 5 exterior are largest ; calyx oval, woolly, consisting of several imbricated scales, terminated by rigid, pinnate, spinous points.

Preparation.—Tincture.

CARDUUS MARIÆ.

Carduus Marianus, *Linn.* *Nat. ord.*, Compositæ.

Synonyms.—Silybum Marianum *(Gærtn.)*, Cirsium maculatum.

Milk Thistle, St. Mary's Thistle.

Habitat.—Southern Europe. Rare in Britain, and probably only introduced.

Parts employed.—Equal parts of the root and seed with the hull on.

Characters.—An annual or biennial, 2 or 3 feet high, not much branched and glabrous, or with but very little cottony wool. *Leaves* smooth and shining above, and variegated by white veins; the lower ones deeply pinnatifid, with broad, very prickly lobes; the upper ones clasping the stem by prickly auricles, but scarcely decurrent. *Flower-heads* large, drooping, solitary at the ends of the branches, with purple florets. Bracts of the involucre very broad at the base, with a stiff, spreading, leafy appendage, ending in a long prickle, and bordered with prickles at its base. Hairs of the pappus simple.

Preparation.—Tincture—dilute alcohol.

CASCARILLA.

Croton Eluteria, *Bennett*. *Nat. ord.*, EUPHORBIACEÆ.

Habitat.—The Bahama Islands and Cuba.

Part employed.—The bark.

Characters.—In quills, 2 or 3 inches in length, and from 2 to 5 lines in diameter, dull brown, but more or less coated with white crustaceous lichens; breaks with a short resinous fracture; is warm and bitter to the taste; and emits a fragrant odour when burned.

Preparation.—Tincture—proof spirit.

CEANOTHUS.

Ceanothus americanus, *Linn*. *Nat. ord.*, RHAMNACEÆ.

New Jersey Tea.

Habitat.—United States.

Parts employed.—The leaves.

Preparation.—Tincture.

CHELONE GLABRA.

Nat. ord., SCROPHULARIACEÆ.

Balmony, Snake-head, Turtle-head.

A common perennial herbaceous plant, a foot or two in height, indigenous to the United States. The closely-clustered, white, rose-coloured, or purple flowers resembling in shape the head of a snake or tortoise, have given both the common and scientific names to this plant.

Parts employed.—The whole plant.

Preparation.—Tincture.

CHIMAPHILA.

Chimaphila umbellata, *Nutt.* *Nat. ord.*, Pyrolaceæ.

Synonyms.—C. corymbosa *(Pursh)*, Pyrola umbellata *(Linn.)*.

Prince's Pine, Pipsissewa, American Wintergreen.

Habitat.—Northern latitudes of America, Europe, and Asia.

Parts employed.—The root and leaves.

Characters.—A small evergreen plant with a perennial creeping yellowish *rhizome,* which gives rise to several simple, erect or semi-procumbent stems, from 4 to 8 inches high, and ligneous at their base. *Leaves* wedge-shaped, somewhat lanceolate, serrate, coriaceous, smooth, shining, sap-green on the upper surface, paler beneath, on short footstalks. *Flowers* white, tinged with red, of an agreeable odour, disposed in a small terminal corymb, on nodding peduncles; calyx small, 5-toothed; petals 5; stamens 10; filaments shorter than the petals; anthers purple; large, nodding and bifurcated. *C. maculata,* a variety with spotted leaves, or veined with greenish white, is said to possess identical properties.

Preparation.—Tincture.

CHININUM.

Present name.—Quinine or Quinia. $C_{20}H_{24}N_2O_2$.

Pure Quinine.

Prepared by precipitating Sulphate of Quinine with solution of Potash, collecting the precipitate, washing it thoroughly with distilled water, then drying it, dissolving it in rectified spirit, and slowly evaporating the filtered solution.

Preparation.—Trituration. It is, however, chiefly used in the preparation of its salts.

CHININUM ARSENICUM.

Synonym.—Quiniæ Arsenias.

Present name.—Triquinia Arsenate. $(C_{20}H_{24}N_2O_2)_3H_3AsO_4.2H_2O$.

Prepared by directly combining pure Quinine with Arsenic Acid.

Characters and Tests.—White silky needles, sparingly soluble in water, yet imparting to it its peculiar bluish tint. The solution gives with Nitrate of Silver a brick-red precipitate, and when treated first with solution of Chlorine and afterwards with Ammonia it becomes emerald green in colour. Dissolves in pure Sulphuric Acid with a feeble yellowish tint, and undergoes no change of colour when gently warmed. Freely soluble in somewhat dilute Nitric Acid, forming a solution which is only faintly precipitated by Chloride of Barium.

Preparations.—Trituration. Solution in 20 O.P. spirit for 1, using 20 O.P. spirit for 3^x, and rectified spirit for all above.

CHLORALUM HYDRATUM.

Synonym.—Chloral hydras.

Contractions.—Chlor-hyd. Cl-h.

Present name.—Chloral Hydrate. $CCl_3.CH(OH)_2$.

This substance may be obtained from Chloral, produced by the action of dry chlorine gas on absolute alcohol, purified by treatment, first with sulphuric acid and afterwards with lime. It is converted into the solid hydrate, by the addition of water, and crystallized from chloroform.

Characters and Tests.—In colourless crystals, which do not deliquesce on exposure to air. It has a pungent, but not an acrid odour, and a pungent and rather bitter taste. On the application of a gentle heat, it fuses to a colourless transparent liquid, which, as it cools, begins to solidify at a temperature of about 120°. It boils in a test-tube, with pieces of broken glass immersed in it, at about 205°, and at a slightly higher temperature it volatilizes on platinum foil without residue. Soluble in less than its own weight of distilled water, rectified spirit, or ether, and in four times its weight of chloroform. The aqueous solution is neutral, or but slightly acid to test-paper, and gives no precipitate with Nitrate of Silver. A solution in chloroform when mixed by agitation with Sulphuric Acid does not impart colour to the acid. 100 grains of Hydrate of Chloral dissolved in one ounce of distilled water, and mixed with 30 grains of slaked lime, submitted to careful distillation with a suitable apparatus, should yield not less than 70 grains of Chloroform.

Preparations —Solution in distilled water to which 5 per cent. of rectified spirit has been added for 1^x, using dilute alcohol for 1, and rectified spirit for all above. Trituration.

CHLORUM.

Synonym.—Liquor Chlori.

Solution of Chlorine. Cl.

Chlorine gas dissolved in water.

Take of	Hydrochloric Acid - - -	6 fluid ounces;
	Black Oxide of Manganese, in fine powder - - -	1 ounce;
	Distilled Water - - - -	34 fluid ounces.

Put the oxide of manganese into a gas-bottle, and, having poured upon it the hydrochloric acid diluted with two ounces of the water, apply a gentle heat, and, by suitable tubes, cause the gas, as it is developed, to pass through two ounces of the water placed in an intermediate small phial, and thence to the bottom of a three-pint bottle containing the remainder of the water, the mouth of which is loosely plugged with tow. As soon as the chlorine ceases to be developed, let the bottle be disconnected from the apparatus in which the gas has been generated, corked loosely, and shaken until the chlorine is absorbed. Lastly, introduce the solution into an amber glass bottle furnished with a well-fitting stopper, and keep it in a cool place.

Characters and Tests.—A yellowish-green liquid, smelling strongly of Chlorine, and immediately discharging the colour of a dilute solution of Sulphate of Indigo. Specific gravity 1·003. Evaporated it leaves no residue. When 20 grains of Iodide of Potassium dissolved in an ounce of distilled water are added to 439 grains by weight (1 fluid ounce) of this preparation, the mixed solution acquires a deep red colour, which requires for its discharge 750 grain-measures of the volumetric solution of Hyposulphite of Soda, corresponding to 2·66 grains of chlorine. The solution therefore contains about 1 grain of chlorine in 180 minims.

Preparation.—$1\frac{1}{2}$ fluid drachm, diluted to 1 fluid ounce with distilled water, forms the 3^x attenuation.

N.B.—All solutions of chlorine should be frequently prepared.

CIMEX.

Cimex lectularius, *Linn.*

Class, Insecta; *Order,* Heteroptera; *Section,* Aurocorisa; *Family,* Cimicidæ.

Common Bed-Bug.

Parts employed.—The entire live insect.

Preparation.—Trituration.

CINCHONINUM SULPHURICUM.

Contractions.—Cinch-s. Cn-s.

Synonym.—Cinchoniæ Sulphas.

Present name.—Cinchonine or Cinchonia Sulphate. $(C_{20}H_{24}N_2O)_2H_2SO_4.2H_2O$.

Sulphate of Cinchonine.

Prepared from the mother liquor remaining after the crystallization of Sulphate of Quinine.

Characters and Tests.—White prismatic crystals soluble in water and alcohol and which fuse when heated, yielding a fine red colouring matter, and an aromatic odour. The aqueous solution gives a white precipitate with Chloride of Barium, and also with excess of Ammonia; the latter precipitate is not dissolved by Ether.

Preparation.—Solution in 20 O.P. spirit.

CINNAMOMUM.

Contractions.—Cinnam. Cnm.

Cinnamomum zeylanicum, *Breyn.* *Nat. ord.,* Lauraceæ.

Synonym.—Laurus Cinnamomum *(Linn.)*.

Fig.—Hayne, xii., 20, 21.

Cinnamon. German, *Zimmet*; French, *Cannelle de Ceylan;* Italian, *Cannella regina ;* Spanish, *Canela de Holanda.*

Habitat.—Ceylon.

Part employed. — The inner bark of shoots from the truncated stocks, as imported from Ceylon.

Characters.—About $\frac{1}{5}$th of a line thick, in closely-rolled quills, which are about 4 lines in diameter, containing several small quills within them, light yellowish-brown, with a fragrant odour and warm sweet aromatic taste ; breaks with a splintery fracture.

Preparation.—Tincture, using rectified spirit. Process I

COBALTUM.

Cobalt. Co.

The pure metal, obtained in a spongy form by reducing the chemically pure Chloride by Hydrogen.

Characters and Tests.—A fine black powder, strongly attracted by the magnet and exhibiting metallic streaks when triturated. It dissolves in Hydrochloric Acid with the evolution of Hydrogen, forming a blue solution which becomes pink on dilution with water and yields with solution of Potash a blue precipitate changing by heat to violet and pale red, with Ammonia a similar precipitate soluble in excess to a brownish solution, which on exposure to the air becomes brownish-red, with Carbonate of Soda a pink precipitate, and with red Prussiate of Potash a reddish brown precipitate. When slightly acid, the solution is not precipitated by Sulphuretted Hydrogen.

Preparation.—Trituration.

COCCINELLA.

Coccinella septempunctata, *Linn.*

Class, INSECTA; *Order*, COLEOPTERA; *Sec.*, PSEUDOTRIMERA; *Family*, COCCINELLIDÆ.

Common Ladybird.

Parts employed.—The whole insect, crushed when alive.

Characters.—Sheath-wings posteriorly entirely blunt, generally presenting seven dots. 3—3½ lines in length. Very finely dotted.

Preparation.—Tincture—proof spirit.

COCHLEARIA.

Cochlearia Armoracia, *Linn.* *Nat. ord.*, CRUCIFERÆ.

Synonym.—Armoracia rusticana.

Fig.—Bent. and Trim., Med. Pl., 21.

Horse-radish.

Part employed.—The root.

Characters.—A long, tapering, fleshy *root*, half an inch to 1 inch in diameter, expanding at the crown into several very short stems. It is externally yellowish, internally white, and has a pungent taste and odour.

Preparation.—Tincture—proof spirit.

CODEINUM.

Present name.—Codeine or Codeia. $C_{18}H_{21}NO_3.H_2O$.

An alkaloid obtained from Opium.

Characters and Tests.—In colourless bold rhombic octahedra, soluble in about 80 parts of cold water, freely soluble in alcohol and ether. The watery solution precipitates the Oxides of Lead, Copper, Iron, and several other metals, from solutions of their salts. It is not coloured red by Nitric Acid, nor blue by Perchloride of Iron, but is precipitated by infusion of Galls. The solution exerts left-handed rotation on a ray of polarized light.

Preparation.—Solution in rectified spirit for 1^x and upwards.

COMOCLADIA.

Comocladia dentata, *Jacq.* *Nat. ord.*, ANACARDIACEÆ.

Guao.

Habitat.—Cuba and St. Domingo.

Parts employed.—The leaves and bark.

Characters.—A tree with an erect stem, not much branched. *Leaves* divided; leaflets six to ten pairs, and an odd terminal one, oblong, acute, toothed, of a shining green above, downy beneath. Juice milky, glutinous, becoming black by exposure to air, staining the linen or the skin of the same colour indelibly. It is supposed by the natives of Cuba to be death to sleep beneath this tree, especially for persons of a sanguine or fat habit.

Preparation.—Tincture—20 O.P. spirit.

CONIINUM.

Synonyms.—Conicine, Coniine, Conylia.

Present name.—Conine or Conia. $C_8H_{15}N$.

A volatile oily base, destitute of oxygen, obtained from *Conium maculatum*, especially the seeds, by distillation with potash-ley.

Characters and Tests.—A colourless, oily liquid, having a pungent, stupefying odour, and very poisonous. Sp. gr. 0·89. Boiling point 335°. Sparingly soluble in water, soluble in alcohol and ether in all proportions. The aqueous and alcoholic solutions possess strong alkaline reaction. It precipitates metallic oxides from their solutions, and forms crystalline, deliquescent salts, which, like the base itself, turn brown in contact with the air. In the aqueous solution Chlorine water produces strong, white turbidity.

Preparation.—Solution in rectified spirit for 1^x and upwards.

CORIARIA RUSCIFOLIA.

Coriaria ruscifolia, *Linn.* *Nat. ord.*, CORIARIACEÆ.

Tutee, Tupa Kihi. Toot Plant.

Habitat.—New Zealand.

Parts employed.—The seeds.

Characters.—A perennial shrub, generally a few feet high, but sometimes attaining 10 to 20 feet or upwards. *Branches* angular. *Leaves* opposite, entire, 1 to 3 inches long, sub-ovate, acuminate, sub-sessile. *Flower racemes* 8 to 12 inches long, drooping, many flowered, pubescent, axillary. *Flowers* very minute, green and inconspicuous. *Petals* become, when the fruit is ripe, succulent and full of purple juice, constituting what is generally called the *berry*. *Fruit*, consisting of 5 to 8 small oblong achenes enclosed in the petals.

Preparation.—Tincture—proof spirit.

COTYLEDON.

Cotyledon umbilicus, *Linn.* *Nat. ord.*, CRASSULACEÆ.

Wall Pennywort. Navelwort.

Parts employed.—The fresh plant collected before flowering.

Characters.—*Stock* perennial, almost woody. Radical and lower *leaves* on long stalks, fleshy, orbicular, broadly crenate, and more or less peltate. *Flowering stems* erect, from 6 inches to 1 foot high, simple or slightly branched, leafy at the base only, and bearing a long raceme of pendulous, yellowish-green flowers. Calyx very small. Corolla cylindrical, about 3 lines long, becoming afterwards somewhat enlarged, with 5 short teeth, and enclosing the stamens and carpels.

Preparation.—Tincture—dilute alcohol.

Average loss of moisture, 92 per cent.

CUBEBA.

Cubeba officinalis, *Miquel.* *Nat. ord.*, PIPERACEÆ.

Synonym.—Piper Cubeba, *Linn.*

Cubebs.

Habitat.—Java and neighbouring islands.

Parts employed.—The dried unripe fruits.

Characters.—The size of black pepper, globular, wrinkled, blackish, supported on a stalk of rather more than its own length; has a warm camphoraceous taste and characteristic odour.

Preparation.—Tincture—rectified spirit.

CUNDURANGO.

Gonolobus Cundurango, *Triana.* *Nat. ord.*, ASCLEPIADACEÆ.

Condor Plant.

This is a climbing plant or shrub found in Ecuador.

Part employed.—The bark.

Characters and Tests.—In quills or fragments, from 1 to 3 lines thick, the quills varying in diameter from $\frac{1}{4}$ to $\frac{3}{4}$ of an inch, coated with a greenish brown, fibrous periderm; inner surface yellowish gray; breaks with a short resinous fracture. Taste, at first sweetish, slightly aromatic, afterwards bitter, rather warm, astringent, with a sweetish after-taste; odour characteristic, sweet. It yields a light brown infusion, which has no alkaline reaction, the colour of which is changed by ammonia to orange-yellow when seen by reflected, and greenish yellow by transmitted light.

Preparation.—Tincture, using proof spirit. Process I. Trituration is suggested.

CUPRUM CARBONICUM.

Synonym.—Cupri Carbonas.

Present name.—Hydrated Dibasic Cupric Carbonate. $CuCO$. $CuH_2O_2.H_2O$.

Obtained by precipitating a solution of Sulphate of Copper with a solution of Carbonate of Soda. It has a similar composition to *malachite.*

Characters and Tests.—A greenish blue powder, insoluble in water and becoming black when boiled with it. Soluble with effervescence in Hydrochloric Acid; soluble also, without residue, in Ammonia and in Cyanide of Potassium, the former solution being deep blue, the latter colourless.

Preparation.—Trituration.

CYTISUS LABURNUM.

Cytisus Laburnum, *Linn.* *Nat. ord.*, Leguminosæ.

Common Laburnum.

Habitat.—Higher mountains of Europe. Cultivated in gardens.

Parts employed.—The seeds.

Preparation.—Tincture—dilute alcohol.

DOLICHOS PRURIENS.

Mucuna pruriens, *D.C.* *Nat. ord.*, Leguminosæ.

Cowhage, or Cow-itch.

Habitat.—West Indies and tropical America.

Parts employed.—The setæ which cover the pods.

Characters.—Strong, brown, stinging hairs, which cause an intolerable itching when placed on the skin.

Preparation.—Tincture—proof spirit.

DORYPHORA DECIMLINEATA.

Class, Insecta; *Order,* Coleoptera.

The Colorado Beetle or Potato Bug.

Parts employed.—The entire insect.

Preparations.—Tincture—dilute alcohol. Trituration

EQUISETUM.

Equisetum hyemale, *Linn.* *Nat., ord.*, equisetaceæ.

Fig.—Eng. Bot., 915.

Scouring Rush, Rough Horse-tail.

Habitat.—Europe, Russian Asia and North America. In Britain, chiefly in Scotland, Ireland, and northern and central England.

Parts employed.—The fresh plant.

Characters.—*Stems* mostly fruiting, but all similar and simple, or rarely with very few branches, 1 to 2 feet high, faintly marked with 15 to 20 striæ, and rough to the touch. *Sheaths* 3 to 5 lines long, white, with black rings round the top and the base; teeth very minute and blunt, or rarely shortly subulate. *Spike* 6 to 9 lines long, with a little conical point on the rounded top.

Preparation.—Tincture—dilute alcohol.

ERIGERON.

Erigeron canadense, *Linn.* *Nat. ord.*, COMPOSITÆ.

Fig.—Eng. Bot., 2019.

Canadian Flea-bane.

Habitat.—North America, and now established as a roadside weed in almost all temperate and hot countries, and appears occasionally as such in England.

Parts employed.—The fresh flowering plant.

Characters.—A stiff, erect annual, 1 to 2 feet high, glabrous except a few long spreading hairs. *Leaves* narrow, and entire or slightly toothed. *Flower-heads* very small and numerous, forming a long, narrow, leafy panicle. Florets minute, the outer ones filiform, scarcely longer than the involucre, white or slightly tinged with red; central ones tubular, yellowish-white.

Preparation.—Tincture.

ERYNGIUM AQUATICUM.

Eryngium aquaticum, *Linn.* *Nat. ord.*, UMBELLIFERÆ.

Button Snake-root.

Habitat.—North America.

Part employed.—The root.

Characters.—*Root* dark brown, very knotty, wrinkled horizontally; fibres of the same colour growing downward. Internally yellowish-white, with an odour resembling *Iris versicolor*, and a sweetish aromatic taste, succeeded by bitterness and a pungency affecting the fauces. It also resembles the taste of *Senega.*

Preparations.—Tincture—dilute alcohol. Trituration of the dried root.

ERYTHROXYLON COCA.

Erythroxylon Coca, *Lam.* *Nat. ord.*, ERYTHROXYLACEÆ.

Coca.

A shrub growing wild in South America, and largely cultivated in Bolivia for the sake of its leaves, which are much used in that country for chewing for the purpose of stimulation.

Parts employed.—The leaves.

Characters.—Obovate, entire, pointed, glabrous, the largest 2 inches or more in length and 1 inch or more in breadth, on short footstalks, having, generally, on their under surface a prominent curved vein on each side of the midrib, running from the base to the apex. They have an agreeable odour resembling that of tea, and a peculiar, bitterish astringent taste.

Preparation —Tincture—proof spirit.

EUCALYPTUS.

Eucalyptus globulus, *Labill.* *Nat. ord.*, MYRTACEÆ.

Fever-tree. Australian Gum-tree.

A large Australian and Tasmanian tree, some specimens being 200 feet high and 15 in diameter.

Parts employed.—The dried leaves.

Characters.—Green, growing on a short stem; they are thick and leathery, spear-shaped, with a curve like a scythe-blade, and have a well-marked nervule through the centre. Thickly sprinkled with pellucid dots. Taste warm, sweetish astringent, and aromatic; odour sweet, aromatic.

Preparation.—Tincture, using 20 O.P. spirit.

EUGENIA JAMBOS.

Eugenia Jambos, *Linn.* *Nat. ord.*, MYRTACEÆ.

Synonym.—Jambosa vulgaris (*D.C.*).

Malabar Plum-tree. Rose Apple.

Parts employed.—The fresh seeds.

Preparation.—Tincture.

EUONYMUS EUROPÆUS.

Euonymus europæus, *Linn.* *Nat. ord.*, Celastraceæ.

Fig.—Eng. Bot., 362.

Spindle-tree.

Part employed.—The ripe fruit.

Characters.—A glabrous shrub, about 3 to 5 feet high. *Leaves* shortly stalked, ovate-oblong or lanceolate, pointed and minutely toothed. Peduncles shorter than the leaves, with seldom more than 3 or 5 flowers. *Pod* red when ripe, opening at the angles so as to show the seeds enclosed in a brilliant orange-coloured arillus.

Preparation.—Tincture—proof spirit.

EUPHORBIA COROLLATA.

Euphorbia corollata, *Linn.* *Nat. ord.*, Euphorbiaceæ.

Large-flowering Spurge.

Habitat.—North America.

Part employed.—The root.

Preparation.—Tincture—proof spirit.

EXTRACTUM FILICIS LIQUIDUM.

Liquid Extract of Male Fern.

Take of Male Fern, in coarse powder	2 pounds;
Ether - - - -	4 pints, or a sufficiency.

Pack the male fern closely in a percolator, and pass the ether slowly through it until it passes colourless. Let the ether evaporate on a water-bath, or recover it by distillation, and preserve the oily extract.

FAGOPYRUM.

Fagopyrum esculentum, *Mœnch.* *Nat. ord.*, Polygonaceæ.

Synonym.—Polygonum Fagopyrum (*Linn.*).

Fig.—Eng. Bot., 1044.

Buckwheat.

Habitat.—Asia, but now common in Europe and North America.

Parts employed.—The whole mature plant.

Preparation.—Tincture—20 O.P. spirit.

FERRUM ARSENICUM.

Synonym.—Ferri Arsenias.

Present name.—Triferric Diarsenate. $Fe_3 2AsO_4$.

Arsenate of Iron partially oxidised.

Take of Sulphate of Iron	9 ounces;
Arsenate of Soda, dried at 300°	4 ounces;
Acetate of Soda	3 ounces;
Boiling Distilled Water	A sufficiency.

Dissolve the arsenate and acetate of soda in 2 pints, and the sulphate of iron in 3 pints of the water, mix the two solutions, collect the white precipitate which forms on a calico filter, and wash until the washings cease to be affected by a dilute solution of chloride of barium. Squeeze the washed precipitate between folds of strong linen in a screw press, and dry it on porous bricks in a warm air-chamber whose temperature shall not exceed 100°.

Characters and Tests.—A tasteless amorphous powder of a green colour, insoluble in water, but readily dissolved by Hydrochloric Acid. This solution gives a copious light blue precipitate with the yellow Prussiate of Potash, and a still more abundant one of a deeper colour with the red Prussiate of Potash. A small quantity boiled with an excess of Caustic Soda and filtered, gives, when exactly neutralized by Nitric Acid, a brick-red precipitate on the addition of solution of Nitrate of Silver. The solution in Hydrochloric Acid when diluted gives no precipitate with Chloride of Barium. 20 grains dissolved in an excess of Hydrochloric Acid diluted with water continue to give a blue precipitate with the red Prussiate of Potash, until at least 170 grain measures of the volumetric solution of Bichromate of Potash have been added.

Preparation.—Trituration.

FERRUM LACTICUM.

Synonym.—Ferri Lactas.

Present name.—Ferrous Lactate. $Fe(C_3H_5O_3)_2.2H_2O$.

Prepared by digesting an excess of pure Iron filings in diluted Lactic Acid on a water-bath until the action has ceased, crystallizing, washing the crystals with rectified spirit and drying them on filtering paper.

Characters and Tests.—Small yellowish needles or crystalline grains which undergo little change in the air; slightly sweetish and astringent in taste; sparingly soluble in water, forming a solution which feebly reddens litmus and quickly acquires a greenish yellow tint. Insoluble in ether and nearly so in alcohol. When heated it gives off dense white acid fumes and becomes black. Heated with strong Sulphuric Acid it evolves a large quantity of pure Carbon Monoxide which burns with a blue flame when ignited. The aqueous solution, acidulated with Hydrochloric Acid, gives a deep blue precipitate with the red, and a light blue one with the yellow Prussiate of Potash. It gives no precipitate with Sulphuretted Hydrogen, or only a very slight one of white Sulphur, and is not affected by Chloride of Barium.

Preparation.—Trituration.

FERRUM OXYDATUM HUMIDUM.

Synonyms.—Ferri Peroxidum Humidum. Ferrum Hydricum in Aqua.

Present name.—Moist Hydrated Ferric Oxide. $Fe_2O_3.H_2O$.

Hydrated Peroxide of Iron with about 86 per cent. of uncombined water.

Take of Solution of Persulphate of Iron (P.B.) - - - -	4 fluid ounces;
Solution of Soda (Natrum Causticum) - - -	33 fluid ounces;
Distilled water - - -	A sufficiency.

Mix the solution of persulphate of iron with a pint of the distilled water, and add this gradually to the solution of soda, stirring them constantly and briskly. Let the mixture stand for two hours, stirring it occasionally, then put it on a calico filter, and, when the liquid has drained away, wash the precipitate with distilled water, until what passes through the filter ceases to give a precipitate with chloride of barium. Lastly, enclose the precipitate, without drying it, in a stoppered bottle. This preparation, when used, should be recently made.

Characters and Tests.—A soft, moist pasty mass, of a reddish-brown colour. Dissolves readily in diluted Hydrochloric Acid without the aid of heat, and the solution gives a copious blue precipitate with the yellow, but not with the red Prussiate of Potash. A little of it dried at 212° until it ceases to lose weight, gives off moisture when heated to dull redness in a test-tube.

Preparation.—Used chiefly for preparing *Ferrum Aceticum.*

FERRUM PHOSPHORICUM.

Synonym.—Ferri Phosphas.

Present name.—Ferrous Hydric Phosphate, $Fe''HPO_4$, mixed with an uncertain amount of Ferric Phosphate, Fe'''_2P_2O .

It is prepared as follows :—

Take of Sulphate of Iron	- - - -	3 ounces ;
Phosphate of Soda	- - -	2½ ounces ;
Acetate of Soda	- - - -	1 ounce ;
Boiling Distilled Water	- -	4 pints.

Dissolve the sulphate of iron in one half of the water, and the phosphate and acetate of soda in the remaining half. Mix the two solutions, and, after careful stirring, transfer the precipitate to a calico filter, and wash it with hot distilled water till the filtrate ceases to give a precipitate with chloride of barium. Finally, dry the precipitate at a temperature not exceeding 120°.

Characters and Tests.—A slate blue amorphous powder, insoluble in water, soluble in Hydrochloric Acid. The solution yields a precipitate with both the yellow and red Prussiate of Potash, that afforded by the latter being the more abundant; and when treated with Tartaric Acid and an excess of Ammonia, and subsequently with the solution of Ammonio-sulphate of Magnesia, lets fall a crystalline precipitate. When the salt is digested in Hydrochloric Acid with a lamina of pure Copper, no dark deposit forms on the metal. 20 grains dissolved in Hydrochloric Acid continue to give a blue precipitate with red Prussiate of Potash until 250 grain measures of the volumetric solution of Bichromate of Potash have been added.

Preparation.—Trituration.

FERRUM PYROPHOSPHORICUM.

Synonym.—Ferri Pyrophosphas.

This is a scale preparation, containing about 55 per cent. of Pyrophosphate of Iron, $Fe_2P_2O_7$, combined with Citrate of Soda.

Characters.—Transparent, yellowish-green, nearly tasteless scales, which are readily soluble in water, forming a green solution, and should have no acid or bitter taste. The solution gives a white precipitate with Chloride of Barium, soluble in Hydrochloric Acid, and when acidulated with Hydrochloric Acid, a blue precipitate with the yellow Prussiate of Potash.

Preparation.—60 grains of the scales may be dissolved in 8½ fluid drachms of distilled water, and then one fluid drachm of rectified spirit may be added. This causes a precipitate at first, but it is re-dissolved by shaking. This solution constitutes 1^x; 1 must be made with a mixture of distilled water 3 parts, and rectified spirit 1 part; 3^x with proof spirit, 2 with spirit 20° over proof, and 5^x and upwards, with rectified spirit.

FERRUM SULPHURICUM.

Synonym.—Ferri Sulphas.

Present name.—Ferrous Sulphate. $FeSO_4.7H O$.

The *Green Vitriol* of commerce, purified by re-crystallisation.

Characters and Tests.—In oblique rhombic prisms, of a pale greenish-blue colour and styptic taste; insoluble in rectified spirit, soluble in water. The aqueous solution is clear, gives a white precipitate with Chloride of Barium, a blue one with the red, and a nearly white or light blue one with the yellow Prussiate of Potash. It gives no precipitate with Sulphuretted Hydrogen.

Preparations.—Trituration. Solution in distilled water. Neither of these preparations, however, keep well. The solution may be rendered much more stable by adding a few drops of diluted Sulphuric Acid.

FULIGO.

Soot.

Characters.—This well known substance has a peculiar odour and a bitter, empyreumatic and disagreeable taste. Treated with water it yields a deep yellow or brown infusion, the colour of which is rendered deeper by heat.

Preparation.—Trituration.

GENTIANA CRUCIATA.

Nat. ord., Gentianaceæ.

Crosswort Gentian.

Part employed.—The root.

Preparation.—Tincture—proof spirit.

GENTIANA LUTEA.

Gentiana lutea, *Linn.* *Nat. ord.*, Gentianaceæ.

Synonym.—G. Lutetia.

Fig.—Bent. and Trim., Med. Pl., 182.

Yellow Gentian.

Habitat.—Mountainous districts of central and southern Europe.

Part employed.—The root.

Characters.—*Root* from half an inch to 1 inch in thickness, several inches in length, often twisted, much wrinkled, or marked with close transverse rings; brown externally, yellow within, tough and spongy; taste at first sweetish, afterwards very bitter.

Preparation.—Tincture—proof spirit.

GINSENG.

Panax Ginseng or Schinseng, *Nees von Esen.* *Nat. ord.*, Araliaceæ.

Synonym.—P. quinquefolium, *(Linn.)*.

Habitat.—China, northern Asia, and North America.

Part employed.—The root.

Characters.—*Root* fleshy, somewhat spindle-shaped, from 1 to 3 inches long, about as thick as the little finger, terminated by several slender fibres; when dried it is yellowish-white, and wrinkled externally; within is a hard, central portion, surrounded by a soft whitish bark. It has a feeble odour, and sweet, slightly aromatic taste, somewhat resembling that of liquorice root.

Preparation.—Tincture—proof spirit.

GNAPHALIUM.

Gnaphalium polycephalum, *Michx.* *Nat. ord.*, Compositæ.

Cud-weed. Sweet-scented Life Everlasting.

Habitat.—Canada and parts of the United States.

Part employed.—The fresh herb.

Preparation.—Tincture—dilute alcohol.

GRATIOLA.

Gratiola officinalis, *Linn.* *Nat. ord.*, Scrophulariaceæ.

Hedge Hyssop.

A perennial plant found in wet situations in the south of Europe, and having a very acrid, bitter taste.

Parts employed.—The entire plant.

Preparation.—Tincture—proof spirit.

GRINDELIA.

Grindelia robusta, and G. squarrosa (*Torrey and Gray, Flora of N. America*, ii. 247.) *Nat. ord.*, Compositæ.

Rosin weed.

Habitat.—California.

Parts employed.—The leaves and unexpanded flower-heads.

Preparation.—Tincture, using rectified spirit.

GUACO.

Mikanio Guaco, *Humb. and Bonpl.* *Nat. ord.*, Compositæ.

This is a climbing plant found in intertropical America; it has been introduced into the West Indies. It is used as an antidote for the bite of venomous snakes. The natives apply the bruised leaves and expressed juice to the bite, and at the same time drink the infusion.

Parts employed.—The fresh herb.

Preparation.—Tincture, which should be imported, as the plant loses its virtues in drying.

GUAREA.

Guarea trichilioides, *Cav.* *Nat. ord.*, Meliaceæ.

Synonym.—Melia guara *(Jacq.)*.

Ball-wood. Bois à balle, Bois rouge (Cayenne).

Habitat.—The Antilles.

Part employed.—The bark.

Preparation.—Tincture—proof spirit.

GYMNOCLADUS.

Gymnocladus canadensis, *Lam.* *Nat. ord.*, LEGUMINOSÆ.

American Coffee Tree.

An account of this is given in Hale's New Remedies, 4th Ed., I. 336.

Part employed.—The pulp surrounding the seeds.

Preparation.—Tincture.

HÆMATOXYLON.

Hæmatoxylon campeachianum, *Linn.* *Nat. ord.*, LEGUMINOSÆ.

Synonym.—Hæmatoxyli Lignum.

Logwood Tree.

Fig.—Bent. and Trim., Med. Pl., 86.

A tree of low growth, crooked in figure, a native of Campeachy and the West Indies.

Characters.—The logs are externally of a dark colour, internally they are reddish-brown; the chips have a feeble agreeable odour, and a sweetish taste; a small portion chewed imparts to the saliva a dark pink colour.

Part employed.—The heart-wood.

Preparation.—Tincture, using proof spirit.

HECLÆ LAVA.

The lava obtained from Mount Hecla, Iceland.

Preparation.—Trituration.

HEDYSARUM ILDEFONSIANUM.

Nat. ord., LEGUMINOSÆ.

Carapicho.

An account of this is given by Dr. Mure, (Pathogénesie Bresilienne).

Parts employed.—The leaves.

Preparation.—Tincture.

HELIANTHUS.

Helianthus annuus, *Linn.* *Nat. ord.*, COMPOSITÆ.

Synonym.—H. platycephalus *(Cass.)*.

Common Sunflower.

Habitat.—Peru. Cultivated in gardens.

Parts employed.—The mature flower-heads.

Characters.—*Flower-heads* very large; ray florets yellow; seeds oily.

Preparation.—Tincture—proof spirit.

HELIOTROPIUM.

Heliotropium peruvianum. *Nat. ord.*, EHRETIACEÆ.

Sweet Garden Heliotrope.

Parts employed.—The entire fresh herb.

Preparation.—Tincture—dilute alcohol. Average loss of moisture, 80 per cent.

HELLEBORUS FŒTIDUS.

Helleborus fœtidus, *Linn.* *Nat. ord.*, RANUNCULACEÆ.

Stinking Hellebore, Bear's Foot.

Habitat.—Southern and parts of central Europe, several parts of England, especially Hampshire and Sussex.

Part employed.—The fresh root.

Characters.—A perennial herb with palmately divided leaves. Lower *leaves* not all radical, but mostly raised on the short perennial base of the stems, forming a large and thick tuft. *Flower-stem* above 1 foot high, with a large close panicle of drooping flowers, of a pale green, often tinged with purple, the concave sepals giving them a globular form. Petals small and tubular. *Bracts* at the ramifications of the panicle ovate, and entire, or shortly 2-lobed at the summit.

Preparation.—Tincture.

HERACLEUM.

Synonym.—Branca Ursina.

Heracleum Sphondylium, *Linn.* *Nat. ord.*, Umbelliferæ.

Cow-parsnip, Hog-weed, False Bear's-breech.

Characters.—A tall coarse plant, more or less rough, with short stiff hairs. *Leaves* pinnate with 3, 5, or 7 large, broad segments, usually 3-lobed and toothed, from 3 to 5 inches long and at least as broad, sometimes more numerous and much narrower. *Umbels* large, of about 20 rays, the outer petals much larger than the others. *Carpels* nearly orbicular, 3 or 4 lines long; the vittas very conspicuous.

Part employed.—The fresh root.

Preparation.—Tincture—proof spirit.

HYDROCOTYLE.

Hydrocotyle asiatica, *Linn.* *Nat. ord.*, Umbelliferæ.

Fig.—Bent. and Trim., Med. Pl., 117.

Thick-leaved Pennywort. Bevilacqua.

A small plant, with a trailing stem, and, from the shape of its leaves, bearing some resemblance to the violet.

Habitat.—Moist grounds in India, central and southern Africa, and islands of the Indian Ocean.

Parts employed.—The whole plant.

Preparation.—Tincture—proof spirit.

IBERIS.

Iberis amara, *Linn.* *Nat. ord.*, Cruciferæ.

Fig.—Eng. Bot., 52.

Bitter Candy-tuft.

Habitat.—Found in various parts of Europe. It is cultivated in gardens on account of its bright, milk-white flowers, and appears occasionally in corn-fields in England.

Characters.—An erect, rather stiff annual, about a foot in height, with a few erect branches forming a terminal flat corymb. *Leaves* oblong-lanceolate or broadly linear, with a few coarse teeth, or slightly pinnatifid. *Flowers* white. Pod nearly orbicular, the long style projecting from the notch at the top.

Parts employed.—The seeds.

Preparation.—Tincture, using proof spirit.

IRIDIUM.

Ir.

A rare metal, found in the Uralian ores of Platinum.

Prepared from the purified double chloride of iridium and sodium by reduction, at a low temperature, in a current of hydrogen, and subsequent washing with distilled water until the washings cease to give a precipitate with nitrate of silver, when the metal is left in a finely divided state.

Characters and Tests.—A fine powder fusible with great difficulty before the oxy-hydrogen blow-pipe, slightly soluble in aqua regia but becoming quite insoluble if strongly ignited. If the powder be intimately mixed with Chloride of Sodium, and the mixture be heated to incipient redness in a current of Chlorine gas, the product will form with water a dark brown-red solution in which Chloride of Ammonium causes a dark brown-red precipitate, insoluble in excess of the reagent but rendered entirely soluble by treatment with Sulphuretted Hydrogen.

Preparation.—Trituration.

JABORANDI.

Pilocarpus pennatifolius. *Nat. ord.*, RUTACEÆ.

A shrub found in Brazil, which, in common with others of the same genus, is known as Jaborandi or Jamborandi.

Parts employed.—The leaves.

Characters.—Slightly aromatic, and causing, when chewed, a fine, prickling, warm glow in the mouth, exactly like that experienced on chewing pyrethrum root.

Preparation.—Tincture, using proof spirit.

JALAPA.

Exogonium Purga, *Benth.* *Nat. ord.*, CONVOLVULACEÆ.

Synonyms.—Ipomœa purga, I. Jalapa.

Fig.—Bent. and Trim., Med. Pl., 186.

Common Jalap.

This plant is a native of Mexico.

Parts employed.—The dried tubercles of the root imported from Vera Cruz.

Characters.—Varying from the size of a nut to that of an orange, ovoid, the larger tubercles frequently incised, covered with a thin brown wrinkled cuticle; presenting, when cut, a yellowish-grey colour, with dark brown concentric circles.

Preparation.—Tincture, using rectified spirit.

JATROPHA.

Jatropha Curcas, *Linn.* *Nat. ord.*, EUPHORBIACEÆ.

Synonyms.—J. purgans, Curcas purgans.

Physic-nut, Purging Nut, Barbadoes Nut.

Habitat.—Brazil, the West Indies, and the West Coast of Africa.

Parts employed.—The seeds.

Characters.—*Seeds* blackish, oval, about 8 lines long, flat on one side, convex on the other; the two sides present a slight longitudinal prominence; the shell contains a whitish, almond-like kernel, having at first a mild, and afterwards an acrid, very harsh, scraping taste.

Preparation.—Trituration. Tincture, using absolute alcohol.

JUGLANS CINEREA.

Juglans cinerea, *Linn.* *Nat. ord.*, JUGLANDACEÆ.

Fig.—Bent. and Trim., Med. Pl., 247.

Butter-nut, Oil-nut, White Walnut.

This is a stately forest tree, indigenous to the United States and Canada, about 50 feet high, with numerous horizontal branches forming a large tufted head. The flowers appear in May, in the middle States of America, and the fruit ripens in September.

Characters.—*Bark* lemon-yellow when fresh, deep brown when dry, having a fibrous texture, a feeble odour and a peculiar bitter, somewhat acrid taste.

Part employed.—The inner bark, especially of the root.

Preparation.—Tincture—proof spirit.

JUNCUS EFFUSUS.

Juncus communis, *Linn.* *Nat. ord.*, JUNCACEÆ.

Common Rush.

Characters. — *Root-stock* shortly creeping, matted, bearing dense tufts of cylindrical, leafless *stems*, 2 or 3 feet high, erect, but soft and pliable, sheathed at the base by a few brown scales. Some of these stems remain barren, so as to resemble leaves; others bear, on one side, at 4 to 6 or 8 inches below the top, a densely clustered panicle of small green or brown *flowers;* the very numerous peduncles vary from a line or two to above an inch in length, the central smaller ones have but 2 or 3 flowers, the others a considerable number in irregular cymes. Perianth segments about 1 line long, very pointed. Capsule about as long, very obtuse, or even notched. Stamens usually 3 only. The loose-flowered variety with the looser panicles, often 2 or 3 inches in diameter, and pale-coloured, is distinguished as *J. effusus.*

Part employed.—The fresh root.

Preparation.—Tincture—dilute alcohol.

KALI ACETICUM.

Synonym.—Kali Acetas.

Present name.—Normal Potassic Acetate. $KC_2H_3O_2$.

Prepared by neutralizing Carbonate of Potash with Acetic Acid, evaporating to dryness and fusing the product.

Characters and Tests.—White foliaceous satiny masses, very deliquescent, with a watery solution of which Tartaric Acid causes a crystalline precipitate, Sulphuric Acid the disengagement of Acetic Acid, and a dilute solution of Perchloride of Iron strikes a deep red colour. Neutral to test-paper, entirely soluble in rectified spirit. Its solution is unaffected by Sulphide of Ammonium.

Preparation.—Solution in distilled water for 1^x, using dilute alcohol for 1, and rectified spirit for all above.

KALI CAUSTICUM.

Synonym.—Liquor Potassæ.

Present name.—Potassium Hydroxide or Hydrate. KHO.

A solution of Caustic Potash in distilled water containing 27 grains in each fluid ounce and answering to the following

Tests.—Specific gravity 1·058. 462·9 grains by weight (1 fluid ounce) require for neutralization 482 grain measures of the volumetric solution of Oxalic Acid, corresponding to 5·84 per cent. by weight of Hydrate of Potash, KHO. It does not effervesce when added to an excess of diluted Hydrochloric Acid. Mixed with an equal volume of distilled water, it gives no precipitate with solution of Lime or Oxalate of Ammonia. When it is treated with an excess of diluted Nitric Acid, and evaporated to dryness, the residue forms with water a nearly clear solution, which may be slightly precipitated by Chloride of Barium and Nitrate of Silver, but is unaffected, or but very slightly affected, by Ammonia.

Preparation.—2 fluid drachms mixed with 9 fluid drachms of distilled water will form the 1 attenuation, from which the others can be prepared with rectified spirit.

KALI CHROMICUM.

Synonym.—Kali Chromas.

Present name.—Normal Potassic Chromate. K_2CrO_4.

Neutral or Yellow Chromate of Potash.

Characters and Tests.—Transparent lemon-yellow anhydrous crystals, which are isomorphous with those of Potassium Sulphate, fusible at a red heat without decomposition, soluble in about 2 parts of water. The solution becomes orange-red on the addition of Hydrochloric Acid, and an excess of Sulphuretted Hydrogen added to the acidified solution converts it into green Chloride of Chromium, rendering it opaque from the separation of sulphur.

Preparation.—Trituration.

KALI CITRICUM.

Synonym.—Kali Citras.

Present name.—Potassic Citrate. $K_3C_6H_5O_7$.

Prepared by neutralizing Citric Acid with Carbonate of Potash and evaporating to dryness.

Characters and Tests.—A white powder of saline, feebly acid taste, deliquescent, and very soluble in water. Heated with Sulphuric Acid, it forms a brown fluid, gives off an inflammable gas, and evolves the odour of Acetic Acid. Its solution, mixed with a solution of Chloride of Calcium, remains clear till it is boiled, when a white precipitate separates, readily soluble in

Acetic Acid. Its solution, acidulated with Hydrochloric Acid, gives a yellow precipitate with Perchloride of Platinum. 102 grains heated to redness till gases cease to be evolved, leave an alkaline residue, which requires for exact neutralization 1,000 grain measures of the volumetric solution of Oxalic Acid.

Preparations.—Solution in distilled water for 1^x, using distilled water to which 5 per cent. of rectified spirit has been added for 1, dilute alcohol for 3^x, and rectified spirit for all above. Trituration.

KALI CYANATUM.

Synonyms.—Kali Cyanidum. Kali Cyanuretum. Potassii Cyanidum.

Present name.—Potassic Cyanide. KCN.

Fused Cyanide of Potassium.

Characters and Tests.—White porcelain-like masses, deliquescent, readily soluble in cold water, sparingly soluble in rectified spirit. Its solution has an alkaline reaction, and when exposed to the air, exhales the odour of Hydrocyanic Acid. It is decomposed by Tartaric Acid, evolving Hydrocyanic Acid vapours and yielding a crystalline precipitate. A dilute solution treated first with minute quantities of Sulphate and Persulphate of Iron, and then acidulated with Hydrochloric Acid, gives a blue precipitate. It is a powerful poison.

Preparation.—Solution in distilled water for 1^x, using distilled water to which 5 per cent. of rectified spirit has been added for 1, dilute alcohol for 3^x, and rectified spirit for all above.

N.B.—Cyanide of potassium and its attenuations should be freshly prepared.

KALI FERROCYANATUM.

Synonyms.—Kali Ferrocyanidum. Kali Ferrocyanuretum. Potassæ Prussias Flava.

Present name.—Potassic Ferrocyanide. $K_4Fe(CN)_6 3H_2O$.

Yellow Prussiate of Potash.

Characters and Tests.—In large yellow crystals, permanent in the air, soluble in water, insoluble in alcohol. The aqueous solution precipitates deep blue with Persulphate of Iron, brick-red with Sulphate of Copper, and white with Acetate of Lead.

Heated with diluted Sulphuric Acid, Hydrocyanic Acid vapours are evolved.

Preparations.—Trituration. Solution in distilled water for 1^x, using distilled water to which 5 per cent of rectified spirit has been added for 1 and 3^x, dilute alcohol for 2 and 5^x, and rectified spirit for all above.

KALI HYPERMANGANICUM.

Synonym.—Kali Permanganas.

Present name.—Potassic Permanganate. $K_2Mn_2O_8$.

Permanganate of Potash.

Prepared by mixing suitable proportions of finely powdered black oxide of manganese, chlorate of potash, and caustic potash, the latter dissolved in water, and exposing the whole, after evaporation to dryness, to a dull red heat, and afterwards boiling the residue, neutralizing with diluted sulphuric acid and repeatedly crystallizing.

Characters and Tests.—Dark purple, slender, prismatic crystals, inodorous, with a sweet astringent taste, soluble in water. A single small crystal suffices to form with 1 ounce of water a rich purple solution, which, when mixed with a little rectified spirit and heated, becomes yellowish-brown. The crystals heated to redness decrepitate, evolve oxygen gas, and leave a black residue, from which water extracts Potash, recognized by its alkaline reaction, and by its giving, when acidulated with Hydrochloric Acid, a yellow precipitate with Perchloride of Platinum. Entirely soluble in cold water. 5 grains dissolved in water require for complete decolouration a solution of 44 grains of granulated Sulphate of Iron (P.B.) acidulated with 2 fluid drachms of diluted Sulphuric Acid.

Preparation.—Solution in distilled water for 1^x and 1, using distilled water to which 5 per cent. of rectified spirit has been added for 3^x and 2, dilute alcohol for 5^x and 3, and rectified spirit for all above.

These attenuations must be freshly made.

KALI MURIATICUM.

Synonym.—Kali Chloridum.

Present name.—Potassic Chloride. KCl.

Prepared by neutralizing Hydrochloric Acid with Carbonate of Potash and evaporating.

Characters and Tests.—In small white crystalline grains, or transparent cubic crystals, free from moisture, has a simple saline taste with slight bitterness, imparts a violet colour to flame, is readily soluble in water. The solution gives with Tartaric Acid a white crystalline precipitate, with Nitrate of Silver a white precipitate soluble in Ammonia and insoluble in Nitric Acid, but is not precipitated by Chloride of Barium.

Preparations.—Trituration. Solution in distilled water for 1^x, using dilute alcohol for 1, and rectified spirit for all above.

KALI OXALICUM.

Synonym.—Kali Oxalas.

Present name.—Hydric Potassic Oxalate. $KHC_2O_4.2H_2O$.

Binoxalate of Potash, Salt of Lemons, Salt of Sorrel.

Prepared by dividing a hot aqueous solution of Oxalic Acid into two equal portions, neutralizing one with Carbonate of Potash, adding the other, and crystallizing.

Characters and Tests.—Colourless rhombic prisms having a sour taste, sparingly soluble in cold water, forming a clear solution which is not affected by solution of Chloride of Ammonium, but when supersaturated with Acetic Acid gives with Chloride of Calcium a white precipitate, which is soluble in Hydrochloric Acid. Heated gradually to redness it is not blackened, but is converted into Carbonate of Potash. This effervesces with diluted Hydrochloric Acid, and forms a solution which gives a yellow precipitate with Perchloride of Platinum.

Preparations.—Trituration. Solution in distilled water for 1, using dilute alcohol for 3^x, and rectified spirit for all above.

KALI SULPHURICUM.

Synonym.—Kali Sulphas.

Present name.—Normal Potassic Sulphate. K_2SO_4.

Commercial Sulphate of Potash recrystallized.

Characters and Tests.—In colourless hard six-sided prisms terminated by six-sided pyramids; decrepitates strongly when heated; sparingly soluble in water, insoluble in alcohol. The aqueous solution is neutral to test-paper, gives no precipitate with Oxalate of Ammonia, but acidulated with Hydrochloric

Acid, it is precipitated white by Chloride of Barium, and yellow by Perchloride of Platinum.

Preparations.—Trituration. Solution in distilled water for ^{x}, using distilled water to which 5 per cent. of rectified spirit has been added for 1 and 3^x, dilute alcohol for 2 and 5^x, and rectified spirit for all above.

KALI TARTARICUM.

Synonym.—Kali Tartras.

Present name.—Normal Potassic Tartrate. $K_2C_4H_4O_6$.

Prepared by neutralizing Cream of Tartar with Carbonate of Potash and crystallizing.

Characters and Tests.—In small colourless four- or six-sided prisms. Heated with Sulphuric Acid, it forms a black tarry fluid, evolving inflammable gas and the odour of burned sugar. Acetic Acid added sparingly to its solution causes the separation of a white crystalline precipitate. Entirely dissolved by its own weight of water. 113 grains heated to redness till gases cease to be evolved, leave an alkaline residue, which requires for exact neutralization 1,000 grain measures of the volumetric solution of Oxalic Acid.

Preparations.—Trituration. Solution in distilled water for 1^x, using distilled water to which 5 per cent. of rectified spirit has been added for 1, dilute alcohol for 3^x, and rectified spirit for all above.

KISSINGEN.

This well-known *Simple-Muriated Mineral Water* has been proved. The Rakoczy was the spring used.

LACHNANTHES.

Lachnanthes tinctoria, *Ell.* *Nat. ord.*, HÆMODORACEÆ.

Spirit Weed. Red Root.

A herb with a red fibrous perennial root, growing in swampy places, southward near the coast in the United States; has also been seen in Rhode Island and New Jersey.

Parts employed.—The fresh plant.

Preparation.—Tincture.

LACTUCA SATIVA.

Lactuca sativa, *Linn.* *Nat. ord.*, COMPOSITÆ.

The cultivated Lettuce.

Parts employed.—The fresh flowering plant.

Preparation.—Tincture—dilute alcohol.

LAPIS ALBUS.

The name *Lapis Albus* has been given to a species of gneiss, (Silico-Fluoride of Calcium), found held in suspension in the waters of the mineral springs of Gastein.

A trituration has also been made from the gneiss rock which is found in the Tauern Mountains, and contains the ores of several metals, but that from the springs will probably be found the most reliable.

LATHYRUS.

Lathyrus sativus, *Linn.* *Nat. ord.*, LEGUMINOSÆ.

Teoree, Kesaree.

Parts employed.—The seeds.

Preparation.—Trituration.

LINUM.

Linum catharticum, *Linn.* *Nat. ord.*, LINACEÆ.

Purging Flax.

Habitat.—Common throughout Europe, except the extreme north, and in west-central Asia. Abundant in Britain.

Parts employed.—The entire fresh plant.

Characters.—A very slender, erect, or slightly decumbent glabrous annual, from 3 to 8 inches high, with small, opposite, obovate or oblong *leaves*, and very small *flowers*, of a pure white, on long, slender pedicels; sepals 5, all pointed; petals 5, obovate, scarcely 2 lines long; stamens 5.

Preparation.—Tincture—20 O.P. spirit.

Average loss of moisture, 25 per cent.

LIPPSPRINGE.

This mineral spring of Westphalia has been proved.

LIQUOR ARSENICALIS.

Synonym.—Liquor Potassæ Arsenitis.

Fowler's Solution of Arsenic.

Take of Arsenious Acid, in powder - - - Carbonate of Potash	of each -	80 grains;
Rectified Spirit - . - -		5 fluid drachms;
Distilled Water - - - -		A sufficiency.

Place the arsenious acid and the carbonate of potash in a flask with 10 ounces of the water, and apply heat until a clear solution is obtained. Allow this to cool, then add the rectified spirit, and as much distilled water as will make the bulk 1 pint.

Characters and Tests.—A colourless liquid, alkaline to test-paper. After being acidulated with Hydrochloric Acid, it gives, with Sulphuretted Hydrogen, a yellow precipitate, which is brightest when the arsenical solution has been previously diluted. 441·5 grains by weight (1 fluid ounce) boiled for five minutes with 10 grains of Bi-carbonate of Soda, and when cold diluted with 6 fluid ounces of water to which a little mucilage of Starch has been added, does not give with the volumetric solution of Iodine a permanent blue colour until 808 grain measures have been added; corresponding to 4 grains of Arsenious Acid in 1 fluid ounce.

Preparation.—As this solution contains 1 grain in 120 minims, 1 fluid drachm diluted to 1 fluid ounce with proof spirit forms the 3^x attenuation, after which rectified spirit can be used.

LOBELIA CARDINALIS.

Lobelia cardinalis, *Linn.* *Nat. ord.*, LOBELIACEÆ.

Cardinal Flower.

A tall smooth plant, with oblong-lanceolate leaves, slightly toothed, and large, showy deep red flowers in an elongated raceme rather one sided; it is indigenous to the United States.

Parts employed.—The mature plant.

Preparation.—Tincture.

LOBELIA SYPHILITICA.

Lobelia syphilitica, *Linn.* *Nat. ord.*, Lobeliaceæ.

Synonyms.—Lobelia cærulea, Rapuntium syphiliticum.

Blue Lobelia. Great Lobelia.

A plant with a somewhat hairy stem, from 1 to 3 feet high, indigenous to North America; thought at one time to possess specific powers in the treatment of syphilis, as its name implies, and used by the Indians for that purpose, but found valueless; it has, however, been found serviceable in other complaints.

Part employed.—The fresh herb.

Characters.—The *flowers* are generally of a light blue colour, occasionally white. The *leaves* are thin, ovate, acute at both ends, 2 to 6 inches long, irregularly serrate.

Preparation.—Tincture.

LOLIUM.

Lolium temulentum, *Linn.* *Nat. ord.*, Graminaceæ.

Fig.—Bent. and Trim., Med. Pl., 295.

Bearded Darnel.

Parts employed.—The ripe spikelets.

Characters.—An erect or slightly decumbent annual grass, 1 to 2 feet high, leafy only in the lower part. *Spike* 6 inches to 1 foot long, the spikelets at a considerable distance from each other. It is closely allied to the *Lolium perenne*, but the root is always annual, the outer glume of the spikelets usually as long as the spikelet itself, the flowering glumes shorter and broader than in the last-named species, and some of them at least have an awn longer than themselves.

Preparation.—Tincture—proof spirit.

LUPULUS.

Humulus Lupulus, *Linn.* *Nat. ord.*, Cannabinaceæ.

The Hop.

Parts employed.—The seeded spikes.

Characters.—Strobiles of a greenish-yellow colour, with minute yellow grains (Lupuline) adherent to the base of the scales. Odour aromatic, taste bitter.

Preparation.—Tincture.

MAGNESIA PHOSPHORICA.

Present name.—Hydric Magnesic Phosphate. $MgHPO_4 . 7H_2O$.

Phosphate of Magnesia.

Prepared by mixing solutions of Phosphate of Soda and Sulphate of Magnesia.

Characters and Tests.—A white crystalline powder, or fine tufts of colourless six-sided acicular prisms, efflorescent, very sparingly soluble in water. Soluble without effervescence in diluted Hydrochloric Acid, forming a clear solution, which when first treated with Chloride of Ammonium yields a copious crystalline precipitate upon the addition of an excess of Ammonia, and a filtrate which is only faintly precipitated by Chloride of Barium, and not at all by Oxalate of Ammonia. The aqueous solution gives a yellow precipitate with Nitrate of Silver. The salt evolves no odour of Ammonia when heated.

Preparation.—Trituration.

MELILOTUS.

Melilotus officinalis, *Linn.* *Nat. ord.*, LEGUMINOSÆ.

Fig.—Eng. Bot., 1340.

Common Melilot.

Parts employed.—The flowers.

Characters.—An annual or biennial, usually erect, 2 to 4 feet high, branched and glabrous. *Leaves* usually distant on long footstalks; stipules narrow; leaflets of the lower leaves obovate or nearly orbicular, those of the upper ones narrower, often linear. *Flowers* numerous, 2 or 3 lines long, of a bright yellow, in long axillary racemes. *Pod* oval, about 2 lines long, marked with irregularly netted veins, and wrinkled.

Preparation.—Tincture—proof spirit.

MENTHA PIPERITA.

Mentha piperita, *Sm.* *Nat. ord.*, LABIATÆ.

Fig.—Bent. and Trim., Med. Pl., 203.

Peppermint.

Parts employed.—The fresh flowering plant.

Characters.—A perennial, very nearly resembling the common mint of gardens, but less erect and with leaves more stalked and broader; spikes fuller, consisting of larger whorls, the lower ones often distant. *Calyx* of 5 teeth, regular. *Corolla* with a short tube and a campanulate 4-lobed limb, the upper lobe rather broader and slightly notched. *Stamens* 4, equal and erect. *Nuts* smooth, not bordered.

Preparation.—Tincture.

MERCURIUS BIBROMATUS.

Synonym.—Mercurii Bibromidum.

Present name.—Mercuric Bromide. $HgBr_2$.

Prepared by agitating mercury with hot water, adding bromine as long as its colour is destroyed, then boiling, filtering, and crystallizing. It should be kept in an amber glass bottle.

Characters and Tests.—In soft silvery laminæ, or white needles, melting and subliming without residue, when heated, sparingly soluble in water, freely soluble in alcohol and still more so in ether. Its aqueous solution has an acid reaction, and is precipitated by exposure to sunlight. It gives with Nitrate of Silver a yellowish white precipitate, insoluble in diluted Nitric Acid, and somewhat sparingly soluble in Ammonia; with Ammonia a white, and with Potash a yellow precipitate.

Preparation.—Trituration.

MERCURIUS BROMATUS.

Synonym.—Mercurii Bromidum.

Present name.—Mercurous Bromide. $HgBr_2$.

Prepared by subliming an intimate mixture of atomic proportions of mercury and mercuric bromide. It should be kept in an amber glass bottle.

Characters and Tests.—A white powder, fibrous masses, or long needles; insoluble in water, tasteless and odourless; fusible and sublimable without decomposition and without residue at a low red heat. Digested with solution of Potash it becomes black; and the clear solution, acidulated with

Nitric Acid, gives a yellowish white precipitate with Nitrate of Silver, sparingly soluble in Ammonia.

Preparation.—Trituration.

MERCURIUS CYANATUS.

Synonyms.—Mercurii Cyanidum, M. Cyanuretum, Hydrargyri Cyanuretum, H. Cyanidum.

Present name.—Mercuric Cyanide. $Hg(CN)_2$.

Bi-cyanide of Mercury.

Prepared by dissolving in 16 parts of water in a glass flask, 2 parts of yellow Prussiate of Potash, and then adding 3 parts of dry Persulphate of Mercury. Boil for half an hour in a sand bath, filter, and evaporate to dryness, stirring constantly. Purify the mass by crystallization from rectified spirit, and preserve the whole in a well-closed amber glass bottle.

Characters and Tests.—Colourless, transparent, anhydrous, rectangular prisms which have a nauseous metallic taste and are very poisonous. Soluble in about eight parts of water, less so in rectified spirit, and nearly insoluble in absolute alcohol. Its aqueous solution is not precipitated by solution of Potash or by Sulphate of Iron. Heated in a dry tube the crystals crackle, melt, and evolve Cyanogen, and afterwards decompose into a brown residue and a sublimate of metallic Mercury.

Preparations.—Solution in rectified spirit for 1 and upwards. —Trituration.

MERCURIUS PRÆCIPITATUS ALBUS.

Synonyms.—Hydrargyrum Ammoniatum, H. Præcipitatum Album.

Present name.—Mercurammonium Chloride. $NH_2Hg''Cl$.

White Precipitate.

Take of Perchloride of Mercury - -	3 ounces;
Solution of Ammonia, specific gravity, 0·959 - - -	4 fluid ounces;
Distilled Water - - - -	3 pints.

Dissolve the perchloride of mercury in the water with the aid of a moderate heat; mix the solution with the ammonia, constantly stirring; collect the precipitate on a filter, and wash it well with cold distilled water, then dry the product at a temperature not exceeding 212°.

Characters and Tests.—An opaque white powder, on which cold water, alcohol, and ether have no action. Digested with Caustic Potash, it evolves Ammonia, acquiring a pale yellow colour, and the fluid, filtered and acidulated with Nitric Acid, gives a white precipitate of Nitrate of Silver. Boiled with a solution of Chloride of Tin, it becomes grey, and affords globules of Metallic Mercury. Entirely volatilized at a heat under redness.

Preparation.—Trituration.

MERCURIUS PRÆCIPITATUS RUBER.

Synonyms.—Hydrargyri Oxidum Rubrum. Hydrargyrum Oxydatum Rubrum.

Present name.—Mercuric Oxide. HgO.

Red Precipitate. Red Oxide of Mercury.

Take of Mercury, by weight	8	ounces;
Nitric Acid	4½	fluid ounces;
Water	2	fluid ounces.

Dissolve half the mercury in the nitric acid diluted with the water, evaporate the solution to dryness, and with the dry salt thus obtained triturate the remainder of the mercury until the two are uniformly blended together. Heat the mixture in a porcelain dish, with repeated stirring, until acid vapours cease to be evolved, and, when cold, enclose the product in a bottle.

Characters and Tests.—An orange-red powder, readily dissolved by Hydrochloric Acid, yielding a solution which, with Caustic Potash added in excess, gives a yellow precipitate, and with solution of Ammonia a white precipitate. Entirely volatilized by a heat under redness, being at the same time decomposed into Mercury and Oxygen. If this be done in a test-tube, no orange vapours are perceived.

Preparation.—Trituration.

MITCHELLA.

Mitchella repens, *Linn.* *Nat. ord.*, RUBIACEÆ.

Partridge Berry. Checker Berry. Winter Clover.

This must not be confounded, on account of its common name, with the *Gaultheria procumbens.* It is a small evergreen, trailing plant, with fragrant flowers and a berry-like, edible fruit of a scarlet colour, and almost tasteless, which lasts through the winter, and it is indigenous to the United States.

Parts employed.—The whole plant.

Preparation.—Tincture.

MORPHINUM.

Synonym.—Morphia.

Present name.—Morphine or Morphia. $C_{17}H_{19}NO_3 . H_2O$.

An alkaloid obtained from Opium.

Characters and Tests. — In short, colourless, rectangular prisms, soluble in rectified spirit, but requiring at least 500 parts of cold water for solution. Nearly insoluble in ether, but freely soluble in Caustic Potash. In solution it has a bitter taste, and distinctly alkaline reaction. Moistened with strong Nitric Acid, it becomes orange-red, and with solution of Perchloride of Iron greenish-blue.

Preparations.—Trituration. Solution in rectified spirit for 1 and upwards.

MORPHINUM ACETICUM.

Synonym.—Morphiæ Acetas.

Present name.—Morphine or Morphia Acetate. $C_{17}H_{19}NO_3 . C_2H_4O_2$.

Characters and Tests.—A white powder, soluble in water and in spirit. From its solution Potash throws down a precipitate which is dissolved by excess of the alkali. It is affected by Nitric Acid and Perchloride of Iron in the same way as Hydrochloride of Morphia. When Sulphuric Acid is added to the salt, acetous vapours are evolved.

Preparations. — Trituration. Solution in a mixture of 3 measures of distilled water with 1 of rectified spirit for 1, using dilute alcohol for 3^x and rectified spirit for all above.

MORPHINUM MURIATICUM.

Synonym.—Morphiæ Hydrochloras.

Present name.—Morphine or Morphia Hydrochloride. $C_{17}H_{19}NO_3 . HCl . 3H_2O$.

Characters and Tests.—In white flexible acicular prisms of a silky lustre, not changed by exposure to the air, and soluble in water and spirit. The aqueous solution gives a white curdy precipitate with Nitrate of Silver, and a white one with Potash, which is re-dissolved when an excess of the alkali is added. Moistened with strong Nitric Acid, it becomes orange-red, and with solution of Perchloride of Iron greenish-blue. Entirely destructible by heat, leaving no residue. 20 grains of the salt dissolved in half an ounce of warm water, with Ammonia added in the slightest possible excess, give on cooling a crystalline precipitate, which, when washed with a little cold water, and dried by exposure to the air, weighs 15·18 grains.

Preparations.—Trituration. Solution in a mixture of 3 measures of distilled water with 1 of rectified spirit for 1, using dilute alcohol for 3^x, and rectified spirit for all above.

MORPHINUM SULPHURICUM.

Synonym.—Morphiæ Sulphas.

Present name.—Morphine or Morphia Sulphate. $(C_{17}H_{19}NO_3)_2.H_2SO_4.5H_2O$.

Characters and Tests.—Tufts of colourless prisms, freely soluble in water and in spirit. From its solution Caustic Potash throws down a precipitate which is dissolved by excess of the alkali. It is affected by Nitric Acid and Perchloride of Iron in the same way as Hydrochloride of Morphia. A dilute aqueous solution gives a white precipitate with Chloride of Barium, insoluble in Nitric Acid.

Preparations.—Trituration. Solution in distilled water for 1^x, using distilled water to which 5 per cent. of rectified spirit has been added for 1, dilute alcohol for 3^x, and rectified spirit for all above.

MUREX PURPUREA.

Class, MOLLUSCA; *Sub-class*, CEPHALOPODA; *Order*, GASTEROPODA; *Sub-order*, PROSOBRANCHIATA; *Section*, SYPHONOSTOMATA; *Family*, MURICIDÆ; *Genus*, MUREX; *and Family*, BUCCINIDÆ; *Genus*, PURPURA.

Purple fish. French, *Coquille à pourpre.*

The exact species of mollusc from which the substance used in the proving, published under this head, was obtained is somewhat uncertain. Several species of *Murex*, Linn., and *Purpura*, Brugiere, have an organ near the head, containing a viscid juice which, on exposure to air and light, acquires a yellowish-green and finally a purple red colour which constituted the Tyrian purple dye of the ancients.

Linnæus included in the genus *Murex* several *Purpuræ* in which the canal is not salient, and all the *Cerithia*, in which it is recurved. Hence it is probable that either the *Murex trunculus*, *M. brandaris* or the *Purpura lapillus* might have furnished the juice in question, which very probably possesses the same properties when obtained from either of these species.

Habitat.—Mediterranean, Adriatic, and other seas.

Part employed.—The desiccated juice.

Characters of the genus Murex.—Varices continuous, three or more rows, aperture rounded, beak mostly very long, canal partly closed.

Characters of the genus Purpura.—Spine short, aperture moderate and notched in front; inner lip flattened. Shell streaked or tuberculated.

Preparation.—Trituration.

MUSCARINUM.

Present name.—Muscarine or Muscaria. $C_5H_{13}NO_2.H_2O$.

An alkaloid first obtained from *Agaricus muscarius,* but now prepared artificially by the action of nitric acid upon *Choline*, prepared from hen's eggs. Both the natural and artificial alkaloids have been used in the provings.

Characters and Tests.—A colourless syrupy substance, without taste or odour, soluble in all proportions of water and alcohol, insoluble in ether, and only sparingly soluble in chloroform ; it becomes crystalline over Sulphuric Acid, but is very deliquescent. It has a strong alkaline reaction, and precipitates Iron and Copper salts. It is not coloured by strong Sulphuric Acid and Bichromate of Potash, or by solution of Chlorine. Heated with moist solid Potash, it evolves ammoniacal vapours of a fishy odour, no browning taking place until the heat has been continued for some time. An active poison.

Preparation.—Solution in distilled water for 1^x, using dilute alcohol for 1, and rectified spirit for all above.

MYGALE AVICULARIA.

Class, ARACHNIDA ; *Order*, ARANEIDEA ; *Tribe*, OCTONOCULINA ; *Family*, MYGALIDÆ.

The Bird Spider of Texas.

Parts employed.—The entire animal.

Characters of genus.—Eyes (:::). Feet hairy, nearly equal, first and fourth pairs largest.

Characters of species.—A large spider generally feeding on ants, but often climbing trees by night to surprise and prey upon small birds. It spins no web, but burrows and lies in ambush in clefts of hollow ravines, in volcanic tufas, or in decomposed lava.

Preparation.—Tincture, using proof spirit.

MYRICA.

Myrica cerifera, *Linn.* *Nat. ord.*, Myricaceæ.

Bayberry, Wax-myrtle, Candleberry.

Habitat.—United States, New England to Louisiana.

Part employed.—The bark of the root.

Preparation.—Tincture.

MYRTUS.

Myrtus communis, *Linn.* *Nat. ord.*, Myrtaceæ.

Common Myrtle.

Habitat.—South of Europe.

Parts employed.—The fresh shoots and leaves.

Preparation.—Tincture.

NABALUS.

Nabalus serpentarius, *Hook.* *Nat. ord.*, Compositæ.

Synonym.—Prenanthes serpentaria (*Pursh*).

Lion's Foot.

A perennial herb, common in mountainous districts of Virginia, North Carolina, and other parts of the United States. Supposed by some to be a variety of the *Nabalus albus*, known also by the name of Lion's Foot, as well as *White Lettuce*, and *Rattlesnake root*, names which are given to *N. serpentaria.*

Part employed.—The entire fresh plant.

Preparation.—Tincture.

NARCISSUS.

Narcissus poeticus, *Linn.* *Nat. ord.*, AMARYLLIDACEÆ.

Fig.—Eng. Bot., 275.

Poet's Narcissus.

Part employed.—The bulb.

Preparation.—Tincture.

NARCOTINUM.

Present name.—Narcotine or Narcotia. $C_{22}H_{23}NO_7$.

An alkaloid obtained from Opium.

Characters and Tests.—Brilliant colourless right rhombic prisms, or acicular groups, tasteless, nearly insoluble in water, but freely soluble in alcohol, and still more so in ether, from the latter of which the crystals are obtained by evaporation. Its alcoholic solution has no alkaline reaction. Dissolved in strong Sulphuric Acid to which a trace of Nitric Acid has been added, it forms an intensely red solution, the colour of which is destroyed by more Nitric Acid. Dissolved in dilute Hydrochloric Acid, it gives a precipitate with Caustic Potash, which is not re-dissolved by an excess of the precipitant. The same solution neutralized with a saturated solution of Bi-carbonate of Soda, stirred briskly with a glass rod and set aside, yields a precipitate. If some solution of Chlorine be first added to its acid solution, and then an excess of Ammonia, an orange-red colour is produced.

Preparations.—Trituration. Solution in rectified spirit.

NARCOTINUM ACETICUM.

Synonym.—Narcotiæ Acetas.

Present name.—Narcotine Acetate. $C_{22}H_{23}NO_7.C_2H_4O_2$.

Characters and Tests.—A white powder soluble in water, alcohol, and in ether, acid to test paper and very bitter. When Sulphuric Acid is added to the salt, acetous vapours are evolved. The other characters and tests are the same as those of Narcotine.

Preparation.—Same as corresponding salt of Morphia.

NARCOTINUM MURIATICUM.

Synonym.—Narcotiæ Hydrochloras.

Present name.—Narcotine Hydrochloride. $C_{22}H_{23}NO_7.HCl.3H_2O$.

Characters and Tests.—A white powder soluble in water, alcohol, and in ether, acid to test paper and very bitter. Its aqueous solution gives a curdy white precipitate with Nitrate of Silver, insoluble in Nitric Acid. The other characters and tests are the same as those of Narcotine.

Preparation.—Same as corresponding salt of Morphia.

NATRUM ARSENICUM.

Synonyms.—Natri Arsenias. Sodæ Arsenias.

Present name.—Hydric Disodic Arsenate. $Na_2HAsO_4.7H_2O$.

Arsenate of Soda.

May be prepared by fusing together 10 parts of Arsenious Anhydride, 8½ parts of Nitrate of Soda and 5½ parts of dried Carbonate of Soda, previously finely powdered and intimately mixed, and crystallizing from hot water.

Characters and Tests. — In colourless transparent prisms soluble in water; the solution is alkaline, giving white precipitates with Chloride of Barium, Chloride of Calcium, and Sulphate of Zinc, and a brick-red precipitate with Nitrate of Silver, all of which are soluble in Nitric Acid. Heated to 300°, it loses 40·38 per cent. of its weight. A watery solution of 10 grains of the residue, treated with 53 grain measures of the volumetric solution of Soda, continues to give a precipitate with the volumetric solution of Nitrate of Silver until 1613 grain measures of the latter have been added.

Preparation.—Solution in water for 1^x, using distilled water to which 5 per cent. of rectified spirit has been added for 1, dilute alcohol for 3^x and 2, and afterwards rectified spirit.

NATRUM CAUSTICUM.

Synonym.—Liquor Sodæ.

Present name.—Sodium Hydroxide or Hydrate. $NaHO$.

A solution of Caustic Soda in distilled water containing 18·8 grains in each fluid ounce, and answering to the following

Tests.—Specific gravity 1·047. 458 grains by weight (1 fluid ounce) require for neutralization 470 grain measures of the volumetric solution of Oxalic Acid, corresponding to 4·1 per cent. by weight of Hydrate of Soda, NaHO. It does not effervesce when added to an excess of diluted Hydrochloric Acid. Mixed with an equal volume of distilled water, it gives no precipitate with solution of Lime or Oxalate of Ammonia. When it is treated with an excess of diluted Nitric Acid, and evaporated to dryness, the residue forms with water a clear solution which is only slightly precipitated by Chloride of Barium or by Nitrate of Silver and not at all by Ammonia. 1 fluid ounce contains 18·8 grains of Hydrate of Soda.

Preparation.—1 fluid drachm mixed with 3 fluid drachms of distilled water will form the 1 attenuation, from which 3^x and 2 can be prepared with dilute alcohol, and all above with rectified spirit.

NATRUM CHLORATUM.

Synonyms. — N. Hypochlorosum, Liquor Sodæ Chloratæ. Chlorinated Soda, Labarraque's Solution.

Take of Carbonate of Soda - - -	12 ounces;
Black Oxide of Manganese - -	4 ounces;
Hydrochloric Acid - - -	15 fluid ounces;
Distilled Water - - -	2 pints.

Dissolve the carbonate of soda in 36 fluid ounces of the distilled water and put the solution into a glass vessel. Mix the oxide of manganese and hydrochloric acid in a glass flask with a bent tube attached by means of a cork to its mouth, apply a gentle heat and with a suitable arrangement of apparatus cause the gas which is evolved to pass first through a wash bottle containing 4 ounces of water and then into the solution of carbonate of soda, regulating the heat so that the gas shall be slowly but constantly introduced. When the disengagement of chlorine has ceased, transfer the solution in which it has been absorbed to a stoppered bottle, and keep it in a cool place.

Characters and Tests.—A colourless alkaline liquid, with astringent taste and feeble odour of Chlorine. It decolorizes Sulphate of Indigo. It effervesces with Hydrochloric Acid, evolving Chlorine and Carbonic Acid, and forming a solution which does not precipitate with Perchloride of Platinum. Specific gravity 1·103. 70 grains by weight added to a solution of 20 grains of Iodide of Potassium in 4 fluid ounces of water and acidulated with 2 fluid drachms of Hydrochloric

Acid, require for the discharge of the brown colour which the mixture assumes, 500 grain-measures of the volumetric solution of Hyposulphite of Soda. It is not precipitated by Oxalate of Ammonia.

Preparation.—Solution in distilled water.

NATRUM HYPOPHOSPHOROSUM.

Synonyms.—Natri Hypophosphis, Sodæ Hypophosphis.

Present name.—Sodic Hypophosphite. $NaPH_2O_2$.

Prepared by adding Carbonate of Soda to solution of Hypophosphite of Lime as long as a precipitate of carbonate of lime is formed, then filtering the solution, mixing it with an equal bulk of rectified spirit, and evaporating it to dryness at a low temperature. Its aqueous solution, when unmixed with spirit, sometimes explodes spontaneously during evaporation. It should be freshly prepared.

Characters and Tests.— A white granular salt, having a bitter nauseous taste. It is deliquescent, very soluble in water and in spirit, but insoluble in ether. At a red heat it ignites, emitting spontaneously inflammable Phosphuretted Hydrogen.

Preparation.—Solution in syrup up to 1, using equal parts of syrup and distilled water to which 5 per cent. of rectified spirit has been added for 3^x, dilute alcohol for 2, and rectified spirit for all above.

NATRUM PHOSPHORICUM.

Synonyms.—Natri Phosphas, Sodæ Phosphas.

Present name.— Hydric Disodic Phosphate. $Na_2HPO_4.12H_2O$.

Rhombic Phosphate of Soda.

Common Phosphate of Soda, purified by re-crystallization.

Characters and Tests.—In transparent colourless rhombic prisms, terminated by four converging planes, efflorescent, tasting like common salt. It imparts a yellow colour to flame. Its solution has a faintly alkaline reaction; it gives a yellow precipitate with Nitrate of Silver, the resulting fluid acquiring an acid reaction. Heated to dull redness, it loses 63 per cent of its weight, leaving a residue which, when dissolved in water, gives with Chloride of Barium a precipitate entirely soluble in diluted Nitric Acid.

Preparations.—Trituration. Solution in distilled water for 1^x, using distilled water to which 5 per cent of rectified spirit has been added for 1, dilute alcohol for 3^x and 2, and rectified spirit for all above.

NATRUM SULPHUROSUM.

Synonyms.—Natri Sulphis, Sodæ Sulphis.

Present name.—Sodic Sulphite. $Na_2SO .10H_2O$.

Prepared by saturating moistened Carbonate of Soda with Sulphurous Acid gas, and crystallizing.

Characters and Tests.—Efflorescent oblique prisms, which fuse at 113° and impart a yellow colour to flame. Soluble in about 4 parts of cold water: the solution has a slightly alkaline reaction and a sulphurous taste. On the addition of dilute Hydrochloric Acid, it evolves a pungent odour of Sulphurous Acid gas, at the same time remaining clear, no separation of Sulphur taking place.

Preparations.—Trituration. Solution in distilled water for 1^x, using distilled water to which 5 per cent. of rectified spirit has been added for 1, dilute alcohol for 3^x and 2, and rectified spirit for all above.

NICCOLUM SULPHURICUM.

Synonym.—Niccoli Sulphas.

Present name.—Nickel Sulphate. $NiSO_4.7H_2O$.

Prepared by dissolving Carbonate of Nickel in dilute Sulphuric Acid, and crystallizing the salt.

Characters and Tests. — Bright green prismatic crystals, efflorescent in the air, soluble in about 3 parts of cold water, but insoluble in alcohol and ether. It has a sweet astringent taste. The solution gives a white precipitate with Chloride of Barium, and a black precipitate with yellow Sulphide of Ammonium, slightly soluble in excess, forming a dark brown solution, and a pale green bulky precipitate with Caustic Potash. When acidulated with Sulphuric Acid it gives no precipitate with Sulphuretted Hydrogen.

Preparations.—Trituration. Solution in distilled water for 1^x, using distilled water to which 5 per cent. of rectified spirit has been added for 1, dilute alcohol for 3^x and 2, and rectified spirit for all above.

NICOTINUM.

Present name.—Nicotine. $C_{10}H_{14}N_2$.

A volatile liquid alkaloid obtained from Tobacco.

Characters.—It has a characteristic odour and an acrid pungent taste, is colourless when pure, but turns brown in the air, soluble in water, in alcohol, and in ether. Specific gravity 1·048. Its aqueous solution gives a yellowish-white precipitate with Perchloride of Platinum. It is very poisonous.

Preparation.—Solution in absolute alcohol for 1.

NITROBENZINUM.

Synonym.—Benzinum Nitricum.

Present name.—Nitro-benzene. $C_6H_5(NO_2)$.

Artificial Oil of Bitter Almonds. Essence of Mirbane.

Prepared by the gradual addition of pure Benzene to strong Nitric Acid in a cooled vessel, washing the product first with water, and then with a dilute solution of carbonate of soda.

Characters and Tests.—A pale yellow liquid which crystallizes in needles at about 37° and boils at 428°. Sparingly soluble in water; soluble in all proportions in alcohol and in ether. Taste very sweet; odour aromatic, resembling that of bitter almonds.

Preparation.—Solution in rectified spirit for 1^x and upwards.

NUPHAR.

Nuphar lutea, *Sm.* *Nat. ord.*, NYMPHÆACEÆ.

Synonyms.—N. minima, Nymphæa lutea (*Linn.*).

Small Yellow Pond Lily.

Part employed.—The fresh root.

Characters.—*Leaves* deeply cordate, glabrous, usually about 6 or 8 inches in diameter. *Flowers* yellow, raised 2 or 3 inches above the water, much less expanded than those of the *White Water Lily*, and faintly scented, the concave sepals assuming a more globular form. Petals and stamens very numerous, but scarcely more than half the length of the sepals. Fruit globular, crowned by the stigmatic disc, indehiscent, or bursting irregularly.

Preparation.—Tincture—dilute alcohol.

Average loss of moisture, 90 per cent.

NYMPHÆA.

Nymphæa odorata, *Ait.* *Nat. ord.*, NYMPHÆACEÆ.

American White Water-lily.

Part employed.—The fresh root.

Characters.—*Rhizome* blackish, fleshy, often as thick as a man's arm. *Leaves* floating, orbicular, sometimes almost kidney shaped, peltate, cordate, cleft at the base quite to the insertion of the petiole ; the lobes, one on each side, prolonged into an acute point, entire, reddish, with prominent veins beneath, dark, shining green above, and 5 or 6 inches in diameter. *Flowers* large, white or rose-coloured and fragrant. Stamens yellow. Stigma with from 12 to 24 rays.

Preparation.—Tincture.

OCYMUM.

Ocymum canum, *D. C.* *Nat. ord.*, LABIATÆ.

Brazilian Alfavaca. Hoary Basil.

Parts employed.—The leaves.

Preparation.—Tincture.

ŒNANTHE.

Œnanthe crocata, *Linn.* *Nat. ord.*, UMBELLIFERÆ.

Fig.—Bent. and Trim., Med. Pl., 124.

Hemlock Water Dropwort.

Part employed.—The root.

Characters.—A stout, branched species, attaining 3 to 5 feet, the *root-fibres* forming thick, elongated tubers close to the stock ; the juice both of the stem and roots becoming yellow when exposed to the air. Leaves twice or thrice pinnate, the segments always above half an inch long, broadly cuneate or rounded, and deeply cut into 3 or 5 lobes. *Umbels* on long terminal peduncles, with 15 to 20 rays, 2 inches long or more ; the bracts of the involucres small and linear, several in the partial ones, few or none under the general umbel. The pedicellate *flowers* at the circumference of the partial umbels are mostly, but not always, barren, the central fertile ones almost sessile. *Fruit* somewhat corky, the ribs broad and scarcely prominent.

Preparation.—Tincture—proof spirit.

Average loss of moisture, 86 per cent.

ORIGANUM.

Origanum vulgare, *Linn.* *Nat. ord.*, LABIATÆ.

Fig.—Bent. and Trim., Med. Pl., 204.

Wild Marjoram.

Part employed.—The fresh plant.

Characters.—*Root* perennial, shortly creeping; the annual *stems* erect, 1 to 2 feet high, more or less hairy. *Leaves* stalked, ovate or ovate-lanceolate, an inch or more long, and slightly toothed. *Flowers* purple or rarely white, in globular compact heads, forming a terminal trichotomous panicle. Bracts ovate, about the length of the calyx. Calyx very hairy inside the mouth, with 5 short, nearly equal teeth. Corolla twice as long as the calyx, with 4 broad nearly equal lobes, of which the upper one is broader and nearly erect. The two longest stamens, and sometimes all four, project beyond the corolla.

Preparation.—Tincture—proof spirit.

Average loss of moisture, 72 per cent.

OSMIUM.

Os.

A rare metal found associated with Platinum.

Prepared from the solution obtained by condensing the volatile oxide of osmium, emitted during the preparation of iridium, in potash. The solution is mixed with excess of hydrochloric acid, and digested with mercury at 104°. The osmium is thus reduced by the mercury, and an amalgam is formed, which is distilled in a stream of hydrogen till all the mercury and calomel are expelled, leaving the metallic osmium in a finely divided state.

Characters and Tests.—A fine black powder which acquires a metallic lustre when burnished; infusible. When heated to redness in the air it takes fire and volatilizes entirely, emitting a highly characteristic, exceedingly irritating and offensive odour. Soluble in Nitric Acid and in Aqua Regia. After exposure to a red heat it becomes less combustible and insoluble in acids.

Preparation.—Trituration.

PALLADIUM.

Pd.

A rare metal found associated with Platinum.

Prepared from the solution of the ore of platinum in aqua regia after precipitation of the platinum by sal ammoniac. The filtered liquid is first neutralized with carbonate of soda, then mixed with a solution of bi-cyanide of mercury, when a precipitate separates, which on being washed, dried and heated to redness, yields the metal in a spongy state.

Characters and Tests.—A metallic powder closely resembling Platinum in appearance, but differing very much in density from that metal; fusible with very great difficulty. When heated to dull redness in the air it acquires a blue or purple film of Oxide, which is again reduced at a white heat. Slowly attacked by Nitric Acid, but readily soluble in Aqua Regia, and yielding a dark-brown residue on evaporation, which when dissolved in water gives with Bicyanide of Mercury a yellowish-white floculent precipitate, sparingly soluble in Hydrochloric Acid, but readily and entirely soluble in Ammonia.

Preparation.—Trituration.

PANAX QUINQUEFOLIUM, *vide* GINSENG.

PAPAYA.

Carica Papaya, *Linn.* *Nat. ord.*, Papayaceæ.

The Papaw Tree.

Habitat.—West Indies and Central America.

Parts employed.—The unripe fruit.

Preparation.—Tincture.

PIMPINELLA.

Pimpinella Saxifraga, *Linn.* *Nat. ord.*, Umbelliferæ.

Pimpinel. Burnet Saxifrage.

A perennial plant, growing in dry meadows and pastures throughout Europe. Abundant in Britain.

Part employed.—The fresh root.

Characters.—*Root-stock* short and thick, but not tuberous. *Stems* erect, 1 to 2 feet high, not much branched, glabrous or downy at the top. *Leaves* very variable, the radical ones usually pinnate, with 7 to 9 pairs of broadly ovate or orbicular segments, 6 to 9 lines long, toothed or lobed; the upper leaves small, their segments divided into a few narrow, or even linear lobes; sometimes all, even the radical leaves have their segments once or twice pinnate, with narrow lobes; sometimes, again, the few stem-leaves are, like the radical ones, simply pinnate, but much smaller, or reduced to simple bracts. *Umbels* compound, terminal, without involucres, with from 10 to 15 rather slender rays; *flowers* white, petals broad, notched with an inflected point. *Fruit* short, without visible calycine teeth.

Preparation.—Tincture—proof spirit.

PIPER METHYSTICUM.

Piper methysticum, *Forst.* *Nat. ord.*, PIPERACEÆ.

Synonym.—Macropiper m. (*Miquel*).

Kava Kava, or Ava.

Habitat.—South Sea Islands.

Part employed.—The root.

Preparation.—Tincture, using rectified spirit.

PLATINA MURIATICA.

Synonym.—Platini Chloridum.

Present name.—Hydric Platinic Chloride. $2HCl.PtCl_4.6H_2O$.

Perchloride of Platinum.

Prepared by dissolving pure Platinum foil in Aqua Regia (a mixture of hydrochloric and nitric acids) at a gentle heat and crystallizing by evaporation over sulphuric acid.

Characters and Tests.—Brownish-red prismatic crystals, very deliquescent and readily and entirely soluble in alcohol and in ether. In water it forms a deep orange-coloured solution, a drop of which, when stirred on a slip of glass with a drop of a moderately strong solution of Nitrate of Potash, will give a well-marked yellow precipitate. The solution becomes bright red on the addition of Proto-chloride of Tin. It is not immediately precipitated by Sulphuretted Hydrogen, only a brown colouration being produced at first, and after some time a brown precipitate. Ten grains of the dry crystals, dissolved in a fluid drachm of distilled water, yield a precipitate with Chloride of Ammonium which, when strongly ignited, leaves a gray, lustreless, porous residue, consisting of spongy Platinum, weighing 3·79 grains.

Preparation.—Solution in distilled water for 1^x and 1, using dilute alcohol up to 2, and rectified spirit beyond 2.

PLATINA MURIATICA NATRONATA.

Synonym.—Platini et Natri Chloridum.

Present name.—Sodic Platinic Chloride, or Sodium Chloroplatinate. $2NaCl.PtCl_4.6H_2O$.

Prepared by mixing solutions of Perchloride of Platinum and Chloride of Sodium and evaporating.

Characters.—Beautiful red striated prismatic crystals, which are soluble in water, alcohol, and ether.

Preparation.—Solution in distilled water for 1^x and 1, using dilute alcohol for 3^x and 2, and rectified spirit for all above.

PLUMBUM IODATUM.

Synonym.—Plumbi Iodidum.

Present name.—Plumbic Iodide. PbI_2.

Prepared from the Nitrate of Lead by precipitation with Iodide of Potassium, and washing and drying the powder.

Characters and Tests.—A bright yellow powder, sparingly soluble in cold water; more so in boiling water, and readily so with only slight effervescence on adding to the hot water a little Hydrochloric Acid, yielding a colourless solution, which, as it cools, deposits beautiful yellow spangles of a silky lustre; they may be fused at a moderate heat. When boiled with Nitric Acid, diluted with an equal bulk of water, it gives off the purple vapours of Iodine.

Preparation.—Trituration.

PLUMBUM NITRICUM.

Synonym.—Plumbi Nitras.

Present name.—Plumbic Nitrate. $Pb2NO_3$.

Prepared by dissolving metallic Lead in somewhat diluted Nitric Acid and crystallizing the salt.

Characters and Tests.—In colourless octahedral crystals, which are nearly opaque, permanent in the air, of a sweetish astringent taste, soluble in water and in alcohol. The aqueous solution is precipitated black by Sulphuretted Hydrogen, white by diluted Sulphuric Acid, and yellow by Iodide of Potassium. Added to Sulphate of Indigo, it discharges the colour.

Preparation.—Solution in rectified spirit for 1 and upwards.

POLYGONUM PUNCTATUM.

Polygonum punctatum, *Elliott.* *Nat. ord.*, POLYGONACEÆ.

Synonyms.—P. hydropiperoides, P. acre.

American Smart-weed.

This plant is closely allied to the *Water-pepper* of this country *(Polygonum Hydropiper*, Linn.*)*. It grows in nearly all parts of the United States, whence the tincture should be imported.

Parts employed.—The whole plant.

Preparation.—Tincture.

POLYPORUS OFFICINALIS.

Polyporus officinalis, *Fries.* *Nat. ord.*, FUNGI.

Synonyms.—Boletus Laricis, B. purgans.

White or Larch Agaric. A fungus growing on the Larch-tree in all countries.

Parts employed.—The entire fungus.

Preparation.—Tincture—dilute alcohol.

POPULUS.

Populus tremuloides, *Michx.* *Nat. ord.*, SALICACEÆ.

American Aspen.

Part employed.—The inner bark.

Preparation.—Tincture.

POTHOS.

Symplocarpus fœtidus, *Salis.* *Nat. ord.*, Orontiaceæ.

Synonyms.—Pothos fœtida *(Michx.).* Dracontium fœtidum *(Linn.)*, Ictodes fœtidus *(Bige.).*

Skunk Cabbage.

This is a very curious plant, growing in the United States, having a perennial, large, abrupt root furnished with numerous fleshy fibres 2 feet or more in length, the leaves being from 1 to 2 feet in length, and 9 inches to a foot in breadth. All parts of it have a fœtid odour, thought to resemble that of the animal after which it is named.

Part employed.—The root.

Preparation.—Tincture.

RANUNCULUS ACRIS.

Ranunculus acris, *Linn.* *Nat. ord.*, Ranunculaceæ.

Fig.—Eng. Bot., 652.

Buttercups. Upright Meadow Crowfoot.

Parts employed.—The entire fresh plant.

Characters.—An erect hairy perennial, often 2 or 3 feet high. *Leaves* nearly all stalked and deeply divided into 3, 5, or 7 palmate segments, which are again cut into 3 toothed lobes, the divisions lanceolate and acute, those of the lower leaves broader and sometimes wedge-shaped. *Flowers* rather large, bright yellow, on long terminal peduncles. Sepals concave, shorter than the petals, spreading horizontally, but not reflected. Carpels ovate, compressed, glabrous, in a globular head.

Preparation.—Tincture—proof spirit.

Average loss of moisture, 70 per cent.

RANUNCULUS FLAMMULA.

Ranunculus Flammula, *Linn.* *Nat. ord.*, Ranunculaceæ.

Fig.—Eng. Bot., 387.

Lesser Spearwort.

Parts employed.—The fresh herb.

Characters.—A glabrous perennial, sometimes annual plant. *Stems* usually more or less decumbent and rooting at the lower joints, seldom above a foot high, with a few loose branches. Lowest *leaves* often ovate, the remainder lanceolate or linear, and all entire or slightly toothed. *Flowers* yellow, on long peduncles, seldom more than half an inch in diameter. Carpels in a small globular head, each with a very short, usually hooked beak.

Preparation.—Tincture—dilute alcohol.

RANUNCULUS REPENS.

Ranunculus repens, *Linn.* *Nat. Ord*, Ranunculaceæ.

Fig.—Eng. Bot., 516.

Creeping Crowfoot.

Parts employed.—The entire fresh plant.

Characters.—Easily distinguished from allied species by the runners shooting from among the radical leaves, rooting and forming fresh plants at every node, and by the leaves divided into 3 stalked segments, each one lobed and toothed, but the central one projecting considerably beyond the others, so as to give the whole leaf an ovate form, not the rounded one of *R. acris.*

Preparation.—Tincture—dilute alcohol.

Average loss of moisture, 85 per cent.

RHUS GLABRA.

Rhus glabra, *Linn.* *Nat. ord.*, Anacardiaceæ.

Common Sumach; called also Smooth Sumach, Pennsylvania Sumach, and Upland Sumach.

A shrub indigenous to the United States.

Characters.—From 4 to 15 feet high. *Stem* usually more or less bent and divided into straggling branches covered with a smooth light grey or somewhat reddish bark. The *leaves* are upon smooth petioles, and consist of many pairs of opposite leaflets, with an odd one at the extremity, all of which are lanceolate, acuminate, acutely serrate, glabrous, and green on their upper surface.

Part employed.—The bark.

Preparation.—Tincture.

RICINUS.

Ricinus communis, *Linn.* *Nat. ord.*, EUPHORBIACEÆ.

Fig.—Bent. and Trim., Med. Pl., 237.

Synonym.—Palma Christi.

Castor Oil Plant.

The tree that supplies the seed from which the well-known oil is obtained, reaches a height of 20 to 40 feet, and is found in the East and West Indies, South America, and China.

Parts employed.—1. The seeds. 2. The leaves.

Characters.—*Leaves* large, alternate, palmately lobed, glabrous and shining, on long, tapering, purplish petioles. *Seeds* about the size of a small bean, oval, compressed, obtuse at the extremities, smooth and shining, of a greyish or ash colour, and marbled with reddish-brown spots and veins. At one end of the seed is a small yellowish tubercle, from which an obscure longitudinal ridge proceeds to the opposite extremity, dividing the side upon which it occurs into two flattish surfaces.

Preparations.—1. Tincture of the seeds, using rectified spirit. 2. Tincture of the leaves, using proof spirit.

Fluid extract, decoction and infusion of the leaves are sometimes employed.

ROBINIA.

Robinia Pseud-acacia, *Linn.* *Nat. ord.*, LEGUMINOSÆ.

False Acacia. Locust-tree.

A tree indigenous to North America, noted for the beauty of its foliage and the sweetness of its flowers. Cultivated in Britain.

Part employed.—The root-bark.

Preparation.—Tincture—20 O.P. spirit.

SARRACENIA.

Sarracenia purpurea, *Linn.* *Nat. ord.*, SARRACENIACEÆ.

Huntsman's Cap. Pitcher Plant. Sidesaddle Flower.

A perennial plant found in wet and boggy places in North America.

Parts employed.—The whole plant, including the root.

Preparations.—Infusion. Tincture.

SCROPHULARIA AQUATICA.

Scrophularia aquatica, *Linn.* *Nat. ord.*, Scrophulariaceæ.

Fig.—Eng. Bot., 854.

Water Betony. Water Figwort.

Parts employed.—The entire plant, including the root.

Characters.—Much resembling *S. nodosa* in habit and flowers. The angles of the stem project into narrow wings; there are no tubers at its base, and the leaves are not so broad, and more obtuse. *Panicle* long and narrow. Lobes of the calyx surrounded by a much more conspicuous scarious border. Corolla of a dull purple.

Preparation.—Tincture—dilute alcohol.

SCROPHULARIA MARYLANDICA.

Nat. Ord., Scrophulariaceæ.

Fever Weed.

Habitat.—North America.

Parts employed.—The leaves.

Preparation.—Tincture.

SCROPHULARIA NODOSA.

Scrophularia nodosa, *Linn.* *Nat. ord.*, Scrophulariaceæ.

Fig.—Eng. Bot., 1544.

Knotted Figwort.

Parts employed.—The entire plant, including the root.

Characters.—A coarse, erect perennial, 2 to 3 feet high, glabrous or nearly so, with a disagreeable smell; the short stock emitting a number of small green knots or tubers. *Stem* sharply quadrangular. *Leaves* large, broadly ovate or heart-shaped, pointed and doubly crenate or serrate. *Panicle* loosely pyramidal or oblong, usually sprinkled with minute glandular hairs. Lobes of the calyx rounded with a very narrow, often scarcely perceptible, scarious border. Tube of the corolla of a pale greenish-purple, twice as long as the calyx; the upper lip more deeply coloured, much longer than the lateral lobes.

Preparation.—Tincture—dilute alcohol.

SCUTELLARIA.

Scutellaria lateriflora, *Linn.* *Nat. ord.*, LABIATÆ.

Mad Dog Skull-cap.

Habitat.—United States.

Parts employed.—The whole plant.

Preparation.—Tincture.

SENNA.

Nat. ord., LEGUMINOSÆ.

Formerly supposed to be derived from Cassia lanceolata, *Lamarck*, and C. obovata, *Colladon*, but now commonly referred by botanists to C. acutifolia, *Delile*, and C. obovata, *Colladon*.

Fig.—Bent. and Trim., Med. Pl., 89, 90.

Alexandrian Senna.

Parts employed.—The leaflets, as imported from Alexandria.

Characters.—Lanceolate or obovate leaflets, about an inch long, unequally oblique at the base, brittle, greyish-green, of a faint peculiar odour, and mucilaginous sweetish taste. The unequally oblique base and freedom from bitterness distinguish the Senna from the Argel leaves, *Solenostemma Argel*, Hayne, which moreover are thicker and stiffer.

Preparation.—Tincture, using proof spirit.

SERPENTARIA, *vide* ARISTOLOCHIA SERPENTARIA.

SILPHIUM.

Silphium laciniatum, *Linn.* *Nat. ord.*, COMPOSITÆ.

Rosin Weed. Compass Plant.

A plant found growing on the prairies of Illinois and Wisconsin, from thence southward and westward.

Parts employed.—The leaves.

Characters.—The plant is very rough and bristly throughout, with a stout *stem* and pinnate *leaves* petioled and clasping at the base. Its lower leaves are said to have the remarkable property of uniformly presenting their edges northward and southward. *Flower-heads* few and somewhat racemed.

Preparation.—Tincture.

SOLANUM LYCOPERSICUM.

Solanum Lycopersicum, *Willd.* *Nat. ord.*, Solanaceæ.

The Tomato.

Habitat.—South America.

Part employed.—The ripe fruit.

Preparation.—Tincture.

SOLANUM MAMMOSUM.

Solanum mammosum, *Linn.* *Nat. ord.*, Solanaceæ.

Nipple Nightshade.

Habitat.—West Indies and Central America.

Part employed.—The ripe fruit.

Preparation.—Tincture.

SYMPHYTUM.

Symphytum officinale, *Linn.* *Nat. ord.*, Boraginaceæ.

Fig.—Eng. Bot., 817.

Common Comfrey.

Habitat.—Moist banks and borders of meadows in Europe and Western Asia; frequent in England and Ireland.

Flowering time.—Spring and summer.

Part employed.—The fresh root stock.

Characters.—*Root-stock* thick, with stout, erect, branching annual stems 2 or 3 feet high. *Leaves* broadly lanceolate, often 8 to 10 inches long or more, tapering into a long point and rough, with short stiff hairs; the lower ones stalked, the upper ones sessile and decurrent along the stem. *Flower-cymes* stalked about the last leaf, once or seldom twice forked; the branches forming short one-sided racemes. *Flowers* all pedicellate, 3 lines long, either pale yellow or a dark dingy purple.

Time for collecting.—Before flowering and in the autumn.

Preparation.—Tincture—proof spirit.

Average loss of moisture, 75 per cent.

TANGHINIA.

Tanghinia venenifera, *Poir.* *Nat. ord.*, Apocynaceæ.

The Madagascar Poison Nut.

Part employed.—The berry.

Preparation.—Tincture.

TAXUS BACCATA.

Taxus baccata, *Linn.* *Nat. ord.*, Taxaceæ.

Fig.—Bent. and Trim., Med. Pl., 253.

Common Yew.

Parts employed.—The young shoots.

Characters.—A densely branched, dark, evergreen tree, not lofty, but attaining a great age, with a thick trunk and hard wood. *Leaves* 6 to 9 lines long, inserted all round the branches, but spreading in one plane in two opposite ranks, convex and shining on the upper side. *Male flowers*, in the axils of the leaves, several together, with numerous monadelphous stamens. *Fruit*, a hard seed, partly imbedded in a bright red, pulpy, half transparent, berry-like cup.

Preparation.—Tincture—20 O.P. spirit.

Average loss of moisture, 59 per cent.

TAXUS ERECTA.

Nat. ord., Taxaceæ.

Upright Irish Yew.

This shrub, with erect branches, is a garden variety of the common Yew.

Parts employed.—The young shoots.

Preparation.—Tincture—20 O.P. spirit.

Average loss of moisture, 60 per cent.

TEPLITZ.

This Bohemian "*Indifferent Thermal*" water has been proved.

THEA.

Thea chinensis, *Sims.* *Nat. ord.*, TERNSTRŒMIACEÆ.

Synonyms.—T. viridis, Camellia Thea.

Green Tea.

Parts employed.—The leaves, as imported.

Characters.—The *leaves* are elliptical-oblong or lanceolate, pointed, serrate, except at base, smooth on both sides, green and shining, having one rib with many transverse veins.

Preparation.—Tincture, using proof spirit.

TILIA.

Tilia europæa, *Linn.* *Nat. ord.*, TILIACEÆ.

The Lime Tree.

Parts employed.—The flowers.

Characters.—A handsome tree, sometimes 120 feet in height, but generally not above half that size. *Leaves* stalked, broadly heart-shaped or nearly orbicular, often oblique, and always pointed, serrate on the edge, glabrous above and more or less downy underneath, especially in the angles of the principal veins, Peduncles hanging amongst the leaves, bordered or winged half-way up by the long, narrow, leaf-like bract. *Flowers* sweet-scented, of a pale whitish-green. *Nut* downy when young.

Preparation.—Tincture.

TITANIUM.

Ti.

A rare metal, having a considerable analogy to tin.

The substance used in the proving was obtained from the bottom of one of the furnaces at the Low Moor Iron Works, in Yorkshire, in a crystalline form. These crystals have been shown to consist of a combination of Cyanide with Nitride of Titanium. Hence they should be preferred to the pure metal.

Preparation.—Trituration.

TONGO.

Dipterix odorata, *Willd.* *Nat. ord.*, LEGUMINOSÆ.

Synonyms.—Baryosma tonga, Coumarouma odorata.

Tonka or Tonquin Bean.

Habitat.—Guiana.

Part employed.—The bean.

Characters.—*Bean* from an inch to 1½ inch long, from 2 to 4 lines broad, usually somewhat compressed, with a dark brown, wrinkled, shining, thin and brittle skin, and a light brown oily kernel, having a strong, agreeable, aromatic odour, resembling that of sweet vernal grass, and a bitterish, aromatic taste.

Preparation.—Tincture, using rectified spirit.

TRILLIUM.

Trillium pendulum, *Ait.* *Nat. ord.*, TRILLIACEÆ.

Synonym.—Trillium album.

White Beth-root, Ground Lily.

Habitat.—United States.

Part employed.—The root.

Preparation.—Tincture.

TRIOSTEUM.

Triosteum perfoliatum, *Linn.* *Nat. ord.*, CAPRIFOLIACEÆ.

Fever-root, Fever-wort, or Wild Ipecac.

A perennial plant, found in the United States. The whole plant is bitter, but the root is the most active part.

Part employed.—The root.

Preparation.—Tincture.

TROMBIDIUM.

Class, ARACHNIDA ; *Order*, ACARINA.

Trombidium muscæ domesticæ.

A bright red mite, found under the wings of the common house-fly in Philadelphia.

Parts employed.—The entire mite.

Preparation.—Tincture, using proof spirit.

TUSSILAGO.

Tussilago Petasites, *Linn.* *Nat. ord.*, Compositæ.

Synonym.—Petasites vulgaris *(Desf.).*

Fig.—Eng. Bot., 430, 431.

Butter-bur.

Parts employed.—The young plant.

Characters.—*Leaves*, the small ones or scales numerous, oblong or linear, entire and erect; the radical ones appearing much later than the flower-stems, angular and toothed, covered underneath with a loose, white, cottony wool, of which there is a little also on the upper side. Flowering *stems* not in tufts, as in the *Common Coltsfoot*, often a foot high when full-grown, with many *flower-heads*, of a dull pinkish-purple, in a narrow-oblong terminal panicle, and almost diœcious. The male plant has a looser panicle of smaller heads, the florets either all tubular and male (the pistil, although apparently perfect, having no ovule and forming no seed), or with a few filiform female ones on the outside; the female panicle more compact, the heads larger, the florets all filiform, or with a few tubular male ones in the centre.

Preparation.—Tincture—dilute alcohol.

Average loss of moisture, 85 per cent.

ULMUS.

Ulmus campestris, *Linn.* *Nat. ord.*, Ulmaceæ.

Fig.—Bent. and Trim., Med. Pl., 232.

Common Elm. Broad-leaved Elm.

Part employed.—The inner bark of two-year-old branches.

Characters.—A tough, brownish-yellow bark, about half a line thick, without smell; taste mucilaginous, slightly bitter and astringent. Its decoction is turned green by Perchloride of Iron, and precipitates with a solution of Gelatine.

Preparation.—Tincture, using proof spirit.

USTILAGO MAYDIS.

Nat. ord., Fungi.

Maize Smut.

A fungus found growing on the Indian Corn, *Zea Mays*, Linn.

Parts employed.—The fresh, just ripe fungus, gathered when it has turned black, but before the frosts have affected it.

Characters.—It is often as large, sometimes larger than an orange. It is covered with a dark grey or brown epidermis, which bursts when ripe. The *spores* are spherical, minute, their surface covered with echinulate warts like prickles; they are deep-seated, nearly black and pulverulent, having the appearance of soot under the naked eye.

Preparations.—Trituration. Tincture.

VERATRINUM.

Present name.—Veratrine or Veratria. $C_{32}H_{52}N_2O_8$.

An alkaloid obtained, in a somewhat impure form, from Sabadilla.

Characters and Tests.—Pale grey, amorphous, without smell, but, even in the most minute quantity, powerfully irritating the nostrils; strongly and persistently bitter, and highly acrid; insoluble in water, soluble in spirit, in ether, and in diluted acids, leaving traces of an insoluble brown resinoid matter. Heated with access of air, it melts into a yellow liquid, and at length burns away, leaving no residue. An active poison.

Preparation.—Solution in rectified spirit.

VIBURNUM OPULUS.

Viburnum Opulus, *Linn.* *Nat. ord.*, Caprifoliaceæ.

Synonyms.—V. lobatum. Opulus glandulosus.

Fig.—Eng. Bot., 332.

Guelder Rose. High Cranberry.

Part employed.—The bark.

Characters.—Not generally a tall shrub when wild, but it will grow into a small tree, and is always glabrous in all its parts. *Leaves* 2 or 3 inches broad, divided to near the middle into 3 or sometimes 5 broad angular pointed lobes, which are usually coarsely toothed or again lobed; the slender leaf-stalks have 2 or more sessile glands at the top, and 2 or more linear fringe-like appendages at the base. *Flowers* white, in dense cymes 2 or 3 inches in diameter; the inner flowers are small, but the outer ones become much enlarged, attaining often near an inch in diameter, but having neither stamens nor styles, they are perfectly barren. *Fruit*, a one-seeded globular berry, of a blackish-red colour when ripe, and an intensely acid and slightly bitter taste.

Preparation.—Tincture—proof spirit.

Average loss of moisture, 47 per cent.

VINCA MINOR.

Vinca minor, *Linn.* *Nat. ord.*, APOCYNACEÆ.

Fig.—Eng. Bot., 917.

Lesser Periwinkle.

Parts employed.—The fresh plant.

Characters.—A perennial, with a creeping *root-stock*, long trailing barren shoots, with short, erect flowering stems, about 6 inches high. *Leaves* narrow-ovate or oblong, evergreen, shining, and perfectly glabrous, opposite and entire. Pedicels shorter than the leaves. *Corolla* small, blue, the tube broad, almost bell-shaped, with a flat spreading limb, with 5 broad, oblique segments, twisted in the bud; stamens, 5, enclosed in the tube. It differs from *Vinca major* in its smaller size, more trailing habit, narrower leaves, which are perfectly glabrous, and shorter and broader segments to the calyx, without any hairs on their edges.

Preparation.—Tincture—proof spirit.

Average loss of moisture, 70 per cent.

VIPERA.

Class, REPTILIA; *Section*, SQUAMATA; *Order*, OPHIDIA; *Sub-order*, VIPERINÆ; *Family*, VIPERIDÆ.

Short provings of the venom of several varieties of these reptiles have been made, including that of the common English viper, *Vipera Berus*, Daud. The venom from any variety may be collected, as directed under *Crotalus*.

Preparation.—Solution in glycerine as directed for *Crotalus*.

VISCUM.

Viscum album, *Linn.* *Nat. ord.*, LORANTHACEÆ.

Fig.—Eng. Bot., 1470.

Mistletoe.

Habitat.—Parasitic on many trees, especially on the apple. Extending over the whole of temperate Europe. Common in Southern and especially Western England.

Flowering time.—Spring.

Parts employed.—Leaves and berries in equal quantities.

Characters.—*Leaves* entire, varying from narrow oblong to nearly obovate, thick and fleshy, and always obtuse. *Berry* white, semi-transparent, enclosing a single seed, surrounded by a very glutinous pulp.

Time for collecting.—When the berries are ripe.

Preparation.—Tincture, corresponding in alcoholic strength with proof spirit. This tincture is difficult to make, owing to the viscidity of its sap; hence the following modification of the usual process must be had recourse to:—

Cut the leaves small, pass through the mincing machine, then bruise, and pass through the machine a second time. Mash up the berries and bruised leaves, and again pound and pass through the machine. Then add to the magma an equal bulk of finely-powdered glass. Mix well together, and pack carefully in the percolator in thin layers of about ½ inch or ¾ inch in thickness, adding a little finely-powdered glass between each, and shaking it well into the interspaces. Proceed in other respects as usual in the case of fresh plants.

Average loss of moisture, 69 per cent.

WIESBADEN.

This "*Simple Muriated Thermal*" water has been proved.

ZINCUM ACETICUM.

Synonym.—Zinci Acetas.

Present name.—Zincic Acetate. $Zn(C_2H_3O_2)_2.2H_2O$.

Prepared by saturating hot diluted Acetic Acid with Carbonate of Zinc and crystallizing.

Characters and Tests.—Thin translucent and colourless crystalline plates, of a pearly lustre, with a sharp unpleasant taste; evolving Acetic Acid when decomposed by Sulphuric Acid; soluble in water, and the solution is precipitated pure white by Sulphuretted Hydrogen. A somewhat dilute watery solution is not affected by Chloride of Barium or Nitrate of Silver; and, when slightly acidulated with Hydrochloric Acid, is not precipitated by Sulphuretted Hydrogen; after it has been boiled for a few minutes with a little Nitric Acid, it yields with Ammonia a white precipitate entirely soluble without colour in an excess of the reagent.

Preparation.—Solution in distilled water for 1^x, using distilled water to which 5 per cent. of rectified spirit has been added for 1, dilute alcohol for 3^x and 2 and rectified spirit for all above.

ZINCUM CARBONICUM.

Synonym.—Zinci Carbonas.

Carbonate of Zinc. A combination of carbonate and hydrate of zinc.

Prepared by mixing hot solutions of Sulphate of Zinc and Carbonate of Soda, boiling, and washing the precipitate with boiling distilled water until the washings are no longer precipitated by Chloride of Barium. It is then dried at a gentle heat.

Characters and Tests.—White, tasteless, inodorous, insoluble in water; soluble, with effervescence and without residue, in diluted Nitric Acid. This solution is not affected by Chloride of Barium or Nitrate of Silver, and gives with Carbonate of Ammonia a white precipitate entirely soluble without colour in an excess of the reagent, forming a solution which is precipitated white by Sulphide of Ammonium.

Preparation.—Trituration.

Used chiefly in the preparation of other salts of zinc.

ZINCUM CYANATUM.

Synonyms.—Zinci Cyanidum, Zincum Hydrocyanicum.

Present name.—Zincic Cyanide. $Zn(CN)_2$.

Prepared by adding cautiously, until it ceases to produce a precipitate, a recently prepared solution of Cyanide of Potassium to a solution of Sulphate of Zinc, collecting, washing, and carefully drying the precipitate.

Characters and Tests.—A white powder, without taste or odour, insoluble in water and spirit, but dissolved by Hydrochloric Acid with disengagement of Hydrocyanic Acid, recognisable by its odour. This solution yields with Ammonia a white precipitate which is entirely soluble, without colour, in an excess of the reagent.

Preparation.—Trituration.

All preparations of cyanide of zinc should be freshly made.

ZINCUM IODATUM.

Synonym.—Zinci Iodidum.

Present name.—Zincic Iodide. ZnI_2.

Prepared by digesting an excess of metallic Zinc with Iodine and water, boiling, filtering, and evaporating to dryness in vacuo.

Characters and Tests.—Dirty white pulverulent masses, easily fusible and subliming in needles, having a metallic taste, very deliquescent and freely soluble in water. The aqueous solution gives white precipitates with Sulphide of Ammonium and Ammonia, that yielded by the latter reagent being entirely soluble without colour in an excess. When heated in contact with the air Iodine is evolved and Oxide of Zinc produced.

Preparation.—Solution in syrup for 1^x and 1, using equal measures of syrup and distilled water to which 5 per cent. of rectified spirit has been added for 3^x, dilute alcohol for 2, and rectified spirit for all above.

ZINCUM MURIATICUM.

Synonym.—Zinci Chloridum.

Present name.—Zincic Chloride. $ZnCl_2$.

Prepared by dissolving Granulated Zinc in diluted Hydrochloric Acid, boiling, adding solution of chlorine in slight excess and then agitating with carbonate of zinc. It is afterwards filtered, evaporated, poured into moulds, and, before it has quite cooled, placed in well stoppered bottles.

Characters and Tests.—Colourless opaque rods or tablets, very deliquescent and caustic; soluble almost entirely in water, alcohol, and ether. The watery solution is precipitated white by Sulphide of Ammonium and Nitrate of Silver; but, if first acidulated with Hydrochloric Acid, it is not affected by Sulphuretted Hydrogen. Its watery solution is not affected by Chloride of Barium or Oxalate of Ammonia, and is not tinged blue by yellow or red Prussiate of Potash. Ammonia throws down a white precipitate entirely soluble in an excess of the reagent.

Preparation.—Solution in distilled water for 1^x, using dilute alcohol for 1, and rectified spirit for all above.

ZINCUM PHOSPHORATUM.

Synonym.—Zinci Phosphidum.

Present name.—Zincic Phosphide. Zn_3P_2.

Prepared by heating metallic Zinc with Phosphorus in a sealed glass tube, placed in an iron tube filled with magnesia, keeping it at a dull red heat for 8 to 10 hours.

Characters and Tests.—Dark steel grey crystalline masses, having a bright metallic lustre; soluble in Hydrochloric Acid with evolution of non-spontaneously inflammable Phosphuretted Hydrogen, recognisable by its disagreeable alliaceous odour, by its dense white fumes in the air, and by its precipitating Silver and Phosphide of Silver from solution of Nitrate of Silver. The acid solution, when rendered slightly alkaline by solution of Ammonia, gives a white precipitate with Sulphide of Ammonium, insoluble in excess.

Preparation.—Trituration.

ZINCUM VALERIANICUM.

Synonym.—Zinci Valerianas.

Present name.—Zincic Isovalerate. $Zn(C_5H\,O_2)_2$.

Prepared by mixing hot solutions of Sulphate of Zinc and Valerianate of Soda (P.B.), concentrating the mixture by evaporation, and washing the crystals thus obtained with cold distilled water.

Characters and Tests.—In brilliant white pearly tabular crystals, with a feeble odour of Valerianic Acid, and a metallic taste; scarcely soluble in cold water or in ether, soluble in hot water and alcohol. Heated to redness in an open crucible, it leaves a residue which, when dissolved in diluted Sulphuric Acid, yields with Ammonia a precipitate which entirely dissolves in an excess of the reagent, and the resulting solution gives a white precipitate with Sulphide of Ammonium. Its solution in hot water is only feebly precipitated by Chloride of Barium. It gives, when heated with diluted Sulphuric Acid, a distillate which, when mixed with the solution of Acetate of Copper, does not immediately affect the transparency of the fluid, but forms after a little time oily drops, which gradually pass into a bluish-white crystalline deposit.

Preparation.—Trituration.

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